



CITY COUNCIL  
OF NAIROBI  
K E N Y A



The Twenty Eighth Annual Report  
of  
The Medical Officer of Health  
1957

WA28  
.HK4  
N15  
1957





22501418551

Ac. 1759

ack'd  
23/12/58.

Wellcome Library  
for the History  
and Understanding  
of Medicine









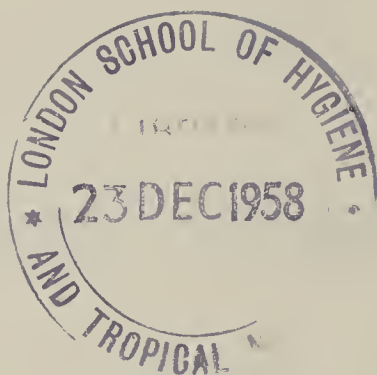
**CITY COUNCIL  
OF NAIROBI  
K E N Y A**



**The Twenty Eighth Annual Report  
of**

**The Medical Officer of Health**

**1957**



WELLCOME
LIBRARY
WA28
. HK4
N15
1957



CITY HALL  
N A I R O B I  
30th July, 1958.

The Worshipful the Mayor,  
Aldermen and Councillors,  
City Council of Nairobi.

Your Worship, Aldermen and Councillors,

I have the honour to present to you my Annual Report on the sanitary circumstances, sanitary administration, vital statistics and the state of the public health of the City of Nairobi for the year 1957, as required by the Municipalities Ordinance, 1948 and The Medical Officers of Health Rules, Section 2 (12d).

A. T. G. THOMAS  
M.D., B.S., D.P.H.  
Medical Officer of Health.





# PUBLIC HEALTH COMMITTEE

DECEMBER 1957

Alderman H. E. Nathoo, M.B.E. .... *Chairman*  
Alderman Mrs. M. Needham-Clark ..... *Deputy Chairman*  
His Worship the Mayor, Alderman H. Travis  
The Deputy Mayor, Alderman Mohan Singh  
Alderman C. Udall, C.B.E.  
Councillor Ajit Singh Sandhu  
    ,, Anoop Singh Vohra  
    ,, Bakhshish Singh Sian  
    ,, W. J. Berry  
    ,, Charles Rubia  
    ,, P. K. Jani  
    ,, G. B. E. Norburn, F.R.I.B.A.  
The Officer in Charge, Nairobi Extra Provincial District,  
    Mr. R. A. Wilkinson.  
The District Commissioner, Mr. W. G. B. Raynor, M.B.E., M.C.

# CONTENTS

## SECTION

### 1

Introduction .....	7
--------------------	---

### 2

Meteorology .....	10
-------------------	----

### 3

Vital Statistics .....	14
------------------------	----

### 4

Notifiable Diseases .....	31
---------------------------	----

### 5

Malaria and Yellow Fever Control .....	33
--	----

### 6

Rodent and Vermin Control .....	40
---------------------------------	----

### 7

Sanitary Administration .....	46
-------------------------------	----

### 8

Food Inspection .....	53
-----------------------	----

### 9

Extracts from the Annual Report of the City Engineer — Sewage, Water and Housing .....	56
---	----

### 10

European Child Welfare .....	62
------------------------------	----

### 11

Day Nurseries .....	67
---------------------	----

### 12

Asian Maternity and Child Welfare .....	69
---	----

### 13

African Maternity and Child Welfare .....	81
---	----

### 14

African Maternity Hospital .....	91
----------------------------------	----

### 15

Venereal Diseases Clinic .....	97
--------------------------------	----

### 16

Staff Clinic and Inoculation Centre .....	99
---	----

### 17

Funerals Service .....	100
------------------------	-----

### 18

Asian Influenza .....	101
-----------------------	-----

### 19

Schedule of Staff .....	102
-------------------------	-----

### 20

Finance .....	106
---------------	-----



## HEALTH CENTRES



*Treatment at one of the new African Health Centres, of which there are four. The number of patients it is expected will receive treatment is in the region of 20,000 a month.*





## INTRODUCTION

As has been the case in each of the years following the end of the Emergency, 1957 was one in which the Department made substantial progress. In our particular case, progress represents simply our ability to expand our services and facilities in proportion with the growing population. It does not mean that the services are applied in any direction with greater intensity.

This progress was exemplified in the first place by the increase in our accommodation. Excellent progress was made in the construction of two long-awaited African Maternity and Child Welfare Clinics at Mbotela and Ofafa, and a third clinic at Liverpool Road was opened in June by Lady Kirby. This was another example of the happy co-operation existing between this Department and the Railway, whereby the latter provide clinic premises which we equip and operate. On the Asian side, a charming clinic was built at Nairobi South on the same basis.

Another most important project made considerable strides towards fruition, and that was the building, staffing and equipping of the four Health Centres, designed to cope with a possible volume of African sick of up to 20,000 a month, this scheme to replace the Government Dispensary, which had become inadequate.

The headquarter building for the W.H.O. and U.N.I.C.E.F. Tuberculosis Survey was brought nearly to completion at Rhodes Avenue.

These two projects are definite milestones in the history of public health in the city, the Tuberculosis Survey being designed to bring this formidable problem within manageable proportions within two years.

Much progress was made in the redecorating and re-equipping of the Lady Grigg African Maternity Hospital, which had been somewhat in the doldrums during the Emergency.

Another great step forward was the opening of the splendid new mortuary unit, which replaced the primitive and unpleasing premises which had been used previously.

In the field of health education, a new departure was made. Following a good deal of planning, a Health Exhibition for Asian school children was opened in April in one of the schools. This was organised by the Department, with the valued co-operation of the Asian school teachers, and each school contributed a tableau or other demonstration illustrating important aspects of public health work.

Sections dealt with milk, food handling, sanitation, infectious diseases control and the like. There was also a prize essay competition for which awards were made for essays on public health matters. The attendance was over 6,000, and it was felt that something had been achieved in instilling ideas of health into the children.

Towards the end of March, a three day conference on Maternal and Infant Mortality in the City was held at the City Hall. A number of papers were contributed by local doctors, and full and interesting discussion took place. Certain measures calculated to improve the health of the newly born and the safety of mothers were agreed.

The V.D. clinic was removed from the African Maternity Hospital, where it had been put for security reasons during the Emergency, back to its original premises in Pumwani, and a new full-time Medical Officer was appointed. The service was being prepared for the impact of taking over male as well as female V.D., which move had been planned to coincide with the opening of the Health Centre service.

In July, authority was given by the Council for the re-designation of the Inspectorate staff. They had hitherto been known as "Sanitary Inspectors", since they held the certificate of the Royal Sanitary Institute. This authority, however, had become the Royal Society of Health, and it was therefore felt that the designation of the Inspectors should be amended accordingly.

The development of inoculation against poliomyelitis in America and the United Kingdom indicated that it was time that we followed suit here, and a scheme was worked out for the systematic protection of children against this disease. This included inoculations given at the schools, and regular sessions at the Inoculation Centre.

At first, owing to some limitation in the supplies available, the whole proceeding had to be done by appointment, and it was found that this presented formidable difficulties, since at least 50% of persons registered failed to appear at the proper time. Later, however, having finished the waiting list, the appointment system was abolished and inoculations given to anyone who attended. During the year, 5,585 persons received poliomyelitis immunisation.

It will be interesting to see whether our efforts in this direction produce any perceptible influence on the occurrence of poliomyelitis in forthcoming years. In theory they should, but the proportion of the whole population which has been made immune is small, and no-one can tell how many people will continue with their annual booster doses. Possibly the only results which will be capable of assessment will be in cases where the whole population of a resident institution has been protected.

In September, the Public Health Committee was redesignated "The Public Health and By-law Committee". This change was made on the grounds that this Department depended so substantially upon By-law operations to carry out its work. The effect is that all By-laws, whether relating to health or not, are studied in draft by the Committee. Time will no doubt show whether this is a really satisfactory arrangement.

While on the subject of By-laws, a steady campaign was adopted to obtain some co-operation from Government in rectifying some of the many nuisances caused by insanitary and decaying Government properties. Some two years ago a schedule was prepared, which listed some 120 Government establishments which showed defects needing remedy. At first it appeared that the magnitude of the problem was a deterrent to getting anything done at all. Later, however, a system was evolved whereby each month a certain number of defects were taken up and followed through, and this scheme has resulted in better co-operation. Much, however, remains to be done.

Quite apart from the desirability of getting rid of, or improving, unsound properties, the principle is involved that this Department is in a somewhat anomalous position if it does not take action in respect of public property but insists on action from the private citizen.

During the year, a reorganisation of the Cleansing Department took place. This was brought about by co-operation between the City Engineer and the Public Health Department, and Mr. Kendray, Health Inspector, took over the post of Cleansing Superintendent.

For the first time properly controlled tipping was instituted at the refuse tip, with adequate earth coverage and certain other substantial improvements were made, and it is most gratifying to record that the service, which had always been something of a Cinderella, took on a decidedly new look. That this improvement was a real one became rapidly evident, since complaints addressed to this Department regarding inadequacies almost ceased, whereas previously they had been frequent.

1958 promises to be full of interest, with the Tuberculosis Survey and the opening of the new Health Centres, and one special enterprise will be undertaken for which the preliminary work started this year, and that is the establishment of a crematorium — an amenity which was first discussed some fifteen years ago, but which has never made any progress.

Once again it is a pleasure to acknowledge the close and helpful co-operation given by the Director of Medical Services and his Department, by members of the Public Health Committee and Council, and the staff of the Public Health and other Departments in the City Hall.



METEOROLOGY

Some Figures of Nairobi Rainfall 1897 - 1957

Readings taken at P.W.D.

Average yearly rainfall 1897—1900	...	...	...	35.10 inches
Average yearly rainfall 1901—1925	...	...	...	37.81 inches
Average yearly rainfall 1926—1950	...	...	...	32.33 inches
Total Rainfall for 1951	...	...	...	60.08 inches
Total Rainfall for 1952	...	...	...	26.09 inches
Total Rainfall for 1953	...	...	...	21.36 inches
Total Rainfall for 1954	...	...	...	24.18 inches
Total Rainfall for 1955	...	...	...	32.25 inches
Total Rainfall for 1956	...	...	...	27.60 inches
Total Rainfall for 1957	...	...	...	49.27 inches

Average Yearly Rainfall 10-year Periods

1901 to 1910	...	...	...	37.16 inches
1911 to 1920	...	...	...	40.71 inches
1921 to 1930	...	...	...	34.90 inches
1931 to 1940	...	...	...	31.98 inches
1941 to 1950	...	...	...	30.60 inches
1951 to 1956	...	...	...	31.93 inches

A NOTE ON THE  
CLIMATE OF NAIROBI CITY

The City of Nairobi is about 5,500 feet high, rather more than 300 miles from the coast, and about 100 miles south of the equator. It is flanked by high ground on the north and west, and by extensive plains to the south and east. The modifying effect of the topography on an otherwise tropical climate is considerable.



The climate displays only relatively minor seasonal variations, but Nairobi's position so far inland results in a large diurnal variation, particularly in temperature and humidity, while its height causes it to be some 13°F. cooler than the coast. The result is a climate which does not have the enervating effect generally associated with the tropics.

The hottest months are February and March, and during this period afternoon temperatures rise to 85°F. or more, and very occasionally to nearly 90°F., a figure which has never yet been exceeded. The period June to August is invariably one of comparative low day and night temperatures. The average maximum temperature for June is about 72°F.; night-time temperatures are generally about 54°F., giving a mean range of 18°F. The lowest minimum recorded is 44°F. during an August night in 1933, but temperatures much nearer freezing point have been experienced in neighbouring valley situations from time to time.

Relative humidity has a very marked daily range. In the early morning it frequently reaches saturation and may fall to 10% in the middle of the day on clear sunny days in February or March.

Cloud is least during the period December-March when skies are about half in the mornings and less than half covered in the afternoons. From April onwards cloud amount increases until in August at the height of the S.E. monsoons the sky may be quite overcast all morning, the cloud only breaking in the afternoon. As cloud usually decreases after midday, there is about 30% more sunshine in the afternoon than in the morning, and it follows that westerly slopes receive more sunshine than easterly. The following figures for mean hours of sunshine per day illustrate this point very clearly:—

	<i>Hrs.</i>		<i>Hrs.</i>		<i>Hrs.</i>
January	9.8	May	6.2	September	5.7
February	9.8	June	4.7	October	7.4
March	8.5	July	4.0	November	8.4
April	7.2	August	4.1	December	7.1

The significance of these figures is better appreciated when it is remembered that the sun is above the horizon for about 12 hours per day throughout the year.

The figures for average rainfall given in the table on page 13 show a distribution with two peaks, one in March-June (the "long rains") and the other in October-December (the "short rains"). Late December and mid-March is popularly supposed to be the dry season, but there is an appreciable expectancy of rain in this period, a rather greater expectancy in fact than in the cool, dry but cloudy mid-year

period. Rainfall is mainly, although not entirely, in the form of afternoon and evening showers, associated at times with thunderstorms. During the months June to September the S.E. Monsoon may bring a dense cap from which light rain sometimes falls for several hours, mainly during the early morning. Very heavy rain of the tropical deluge type occurs infrequently; when it does it is invariably associated with the more violent type of thunderstorm. In 1951, a very wet year, falls of as much as 5" in 3 hours were experienced in the Nairobi area during the "long rains". This is, however, exceptional, falls exceeding 2" in 24 hours being infrequent.

As is general in East Africa, rainfall means can be very misleading. Since several years of short rainfall may follow one another, means have to be interpreted with some circumspection. Some indication of the range of variation is given by the following extreme falls:—

Highest fall recorded in Nairobi 61.80" in 1930.

Lowest fall recorded in Nairobi 19.13" in 1943.

It is apposite to note at this juncture that the mean annual evaporation from a free water surface in Nairobi is some 36", i.e. a figure comparable with the mean rainfall.

High winds are not common in Nairobi, but during February and March moderately strong east or north-easterly winds prevail, which combined with very low humidities and high temperatures, make the few weeks before the rains the most trying of the year.

SOME METEOROLOGICAL DETAILS — EASTLEIGH AERODROME 1957

(From the E.A. Meteorological Department)

	1957	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Mean												
	Maximum	78.7	78.0	79.2	78.3	75.2	72.5	70.3	71.7	78.7	80.3	76.1	76.4
	Mean												
	Minimum	57.0	55.6	57.9	59.5	59.1	55.9	53.7	54.2	54.8	57.8	58.5	58.4
TEMPERATURE (F)	...												
	Mean	67.9	66.8	68.5	68.9	67.1	64.2	62.0	62.9	66.7	69.1	67.3	67.4
RAINFALL (inches)	...	6.52	0.61	2.50	7.67	10.01	1.97	0.03	0.55	2.28	2.55	8.80	2.72
DAYS OF RAIN	...	9	4	9	17	19	6	2	4	3	9	22	9
AVERAGE RAINFALL OVER 14 YEARS	...	1.35	1.16	3.11	7.12	3.83	1.50	0.59	0.83	1.18	1.94	4.31	2.76
RELATIVE HUMIDITY %													
(E.A.S.T.)	...	80	75	79	84	85	84	85	83	78	78	84	81
	(1500)	42	42	45	50	64	58	60	55	40	38	54	55
MEAN ATMOSPHERIC PRESSURE (mbs.)	...	839.3	839.8	839.5	839.3	840.2	841.3	841.3	841.5	841.5	840.7	840.2	839.6
(E.A.S.T.)	...	835.6	836.1	835.9	835.9	837.2	838.7	839.0	838.8	837.8	836.5	836.7	836.1

VITAL STATISTICS

GENERAL

Area of City	...	...	...	20,480 acres or 32 sq. miles.
Population (estimate)	...			221,700
Population density per acre	...			10.82

Summary of Vital Statistics

	Estimated population	Deaths	Death rate per 1,000	Live births	Birth rate per 1,000	Infant deaths	Infant mortality rate	Live and still births	Maternal deaths	Death rate per 1,000 births
Europeans	22,200	117	5.27	483	21.76	14	28.57	493	0	0
Asians	84,500	480	5.67	3,955	46.80	182	46.02	4,061	5	1.23
Africans	115,000	1,004	8.7	3,286	28.57	323	98.29	3,426	4	1.16
TOTALS	221,700	1,601	7.2	7,724	34.88	519	69.71	7,980	9	1.25

14

Summary of Principal Causes of Death

(Figures in brackets=total deaths)

Europeans (117)		Asians (480)		Africans (1,004)	
Circulatory	24=20.5%	Respiratory	107=22.2%	Respiratory	245=24.4%
Cancer	22=18.8%	Under 1 year	101=21%	Infections	175=17.4%
Violence	20=17%	Circulatory	67=13.9%	Under 1 year	136=13.5%
Under 1 year	11=9.4%	Digestive	40=8.3%	Digestive	128=12.7%

Table 1

Population Figures 1953 to 1957

(Estimates by East African Statistical Department)

	1953	1954	1955	1956	1957
Europeans	16,000	17,500	18,500	20,000	22,200
Asians	60,000	63,000	67,000	70,000	84,500
Africans	100,000	100,000	110,000	120,000	115,000
	176,000	180,500	195,500	210,000	221,700



Table 2

Births Notified in 1957

							Live Births	Still Births
Europeans	...	...	...	...	...	...	483	10
Asians	...	...	...	...	...	...	3,955	106
Africans	...	...	...	...	...	...	3,286	140
							7,724	256

Table 3

Birth Rates for Past Five Years

	1953	1954	1955	1956	1957
Europeans	18.4	20.9	21.4	23	21.76
Asians	54.4	51.9	50.8	55.4	46.80
Africans	16.1	16.5	23.6	25.6	28.57

Table 4

Infant Mortality Rates for Past Five Years

	1953	1954	1955	1956	1957
Europeans	20	38	18	19.9	28.57
Asians	49	50	48	46.7	46.02
Africans	281	187	111	130.5	98.29

15

Table 5

Death Rates over Past Five Years

	1953	1954	1955	1956	1957
Europeans	6.9	6.45	6.00	5.9	5.27
Asians	6.26	6.61	5.52	5.93	5.67
Africans	17.60	13.63	11.03	9.3	8.7
TOTALS	12.06	10.48	8.63	7.86	7.2

Table 6

Maternal Deaths and Maternal Mortality Rate 1957

	Live and Still Births	Maternal Deaths	Rate/1,000 Births
Europeans	493	0	0
Asians	4,061	5	1.23
Africans	3,426	4	1.16
TOTALS	7,980	9	1.25

Table 7

COMPARATIVE VITAL STATISTICS 1946 — 1957

	Live Resident Births			Infant Mortality Rates			Resident Deaths			Death Rate			Maternal Mortality Rates			
	European	Asian	African	European	Asian	African	European	Asian	African	European	Asian	African	Races	European	Asian	African
1946	165	1,526	1,294	48.48	59.63	71.09	78	235	689	7.5	6.3	10.9	9.0	5.9	3.2	2.9
1947	236	1,668	1,346	63.56	98.33	224.37	95	343	906	7.04	9.03	11.76	10.46	—	4.0	2.8
1948	226	2,250	1,554	75	67	187	108	340	807	10.0	8.2	12.2	10.59	3.6	1.3	4.9
1949	326	2,656	1,703	25	57	168	118	332	922	9.8	6.6	13.8	10.7	3.0	—	2.8
1950	286	2,891	1,794	38.5	57.7	169.5	124	360	982	8.6	7.0	14.0	10.7	6.9	1.0	1.0
1951	304	3,117	1,979	52	52	180	148	437	1,350	9.9	8.0	16.8	12.9	—	2.19	3.4
1952	326	3,416	1,711	24	56	299	114	442	1,453	7.3	7.9	15.3	12.0	3.3	2.5	2.2
1953	295	3,278	1,614	20	49	281	111	376	1,760	6.9	6.2	17.6	12.8	—	0.6	4.0
1954	366	3,274	1,650	32.8	50.4	187.8	113	417	1,363	6.4	6.6	13.6	10.5	2.7	2.1	5.0
1955	387	3,462	2,517	18	48	111	111	381	1,214	6.0	5.52	11.0	8.6	2.5	2.3	2.0
1956	452	3,806	2,935	19.9	46.7	130.5	118	415	1,117	5.9	5.93	9.3	7.85	4.4	0.53	2.7
1957	483	3,995	3,286	28.57	46.02	98.29	117	480	1,004	5.27	5.67	8.7	7.2	0	5	4

## Summary of the Causes of Deaths

	Europeans	Asians	Africans	Totals	Percentage of all deaths in 1957.	Percentage of all deaths in 1956.	Death Rate 1957.	Death Rate 1956.
1. Infectious and Parasitic Diseases ... ..	3	17	175	195	12.18	11.45	0.87	0.9
2. Cancer and other Tumours	22	8	23	53	3.31	3.51	0.23	0.27
3. Rheumatism, Diseases of Nutrition, etc. ...	1	13	21	35	2.18	2.3	0.15	0.18
4. Diseases of the Blood, etc.	2	8	34	44	2.74	2.9	0.19	0.22
5. Chronic Poisoning and Intoxications ...	—	—	3	3	0.18	0.48	0.01	0.03
6. Diseases of the Nervous System ... ..	10	39	46	95	5.93	6.54	0.42	0.51
7. Diseases of the Circulatory System ... ..	24	67	30	121	7.55	6.96	0.54	0.54
8. Diseases of the Respiratory System ... ..	6	107	245	358	22.36	16.6	1.61	1.30
9. Diseases of the Digestive System ... ..	5	40	128	173	10.8	13.21	0.8	1.03
10. Diseases of the Genito-Urinary System (non-venereal) ...	6	16	19	41	2.56	2.54	0.18	0.20
11. Diseases of Pregnancy, Childbirth, etc. ...	—	5	4	9	0.56	0.72	0.04	0.05
12. Diseases of the Skin ...	—	2	—	2	0.12	0.12	0.009	0.009
13. Diseases of Bones and Joints ... ..	—	—	—	—	—	0.24	—	0.019
14. Congenital Malformations	1	9	20	30	1.85	2.18	0.13	0.17
15. Diseases peculiar to the First Year of Life ...	11	101	136	248	15.49	15.51	1.11	1.21
16. Senility, old age ...	4	7	7	18	1.12	1.09	0.08	0.08
17. Deaths from Violence ...	20	29	72	121	7.56	8.78	0.54	0.69
18. Ill-defined Causes ...	2	12	41	55	3.43	4.78	0.24	0.37
TOTAL OF ALL DEATHS	117	480	1004	1601			7.22	7.85

# Causes of Infant Deaths

*Under one month*

International List No.	Cause	Europeans	Asians	Africans	Total
12.	Tetanus neonatorum ...	—	—	2	2
30.	Congenital syphilis ...	—	—	1	1
36.	Poliomyelitis ...	1	—	—	1
81.	Meningitis ...	—	—	2	2
98.	Gangrene (chest wall) ...	—	—	1	1
105.	Acute oedema of larynx ...	—	2	—	2
107.	Broncho pneumonia ...	—	12	17	29
108.	Double pneumonia ...	—	—	1	1
108.	Lobar pneumonia ...	—	1	—	1
109.	Pneumonia — undefined ...	—	5	6	11
119.	Diarrhoea ...	—	2	1	3
119.	Gastro enteritis ...	—	1	2	3
119.	Enteritis ...	—	—	1	1
132.	Uraemia ...	—	—	1	1
144.	Toxaemia of pregnancy ...	—	1	—	1
147.	Cerebral haemorrhage ...	—	2	1	3
153.	Impetigo ...	—	1	—	1
157.	Achondroplasia dwarf ...	—	—	1	1
157.	Spina bifida ...	—	—	1	1
157.	Hydrocephalus ...	—	—	1	1
157.	Congenital heart disease ...	—	3	6	9
157.	Congenital deformity ...	1	—	—	1
157.	Congenital maldevelopment ...	—	1	—	1
157.	Congenital abnormality ...	—	1	—	1
157.	Cephalocele ...	—	1	—	1
157.	Congenital biliary obstruction ...	—	1	—	1
158.	Marasmus ...	—	2	—	2
158.	Debility ...	—	1	—	1
158.	Small weak child ...	—	1	—	1
159.	Prematurity ...	8	74	99	181
160.	Prolonged labour ...	—	2	1	3
160.	Placenta praevia ...	—	1	—	1
160.	Delayed in 2nd stage ...	—	—	1	1
160.	Forceps delivery ...	—	—	2	2
160.	Intra-cranial injury ...	—	2	—	2
160.	Intra-cranial haemorrhage ...	1	1	—	2
160.	Cerebral injury ...	—	—	6	6
160.	Difficult delivery ...	—	—	1	1
160.	Prolapsed cord ...	—	—	1	1
161.	Haemorrhagic disease of newborn ...	—	2	—	2
161.	Haemolytic disease of newborn ...	—	1	—	1
161.	White asphyxia ...	—	—	4	4
161.	Congenital jaundice ...	—	2	1	3
161.	Asphyxia neonatorum ...	—	6	2	8
161.	Congenital oedema ...	—	1	—	1
161.	Atelectasis ...	2	1	10	13
200.	Natural causes ...	—	—	1	1
200.	Unknown ...	—	—	3	3
		13	131	177	321



## Causes of Infant Deaths

*From one month to one year*

International

List No.	Cause	Europeans	Asians	Africans	Total
9.	Whooping cough ...	—	—	6	6
13.	Primary tuberculosis ...	—	—	3	3
13.	Pulmonary tuberculosis ...	—	—	1	1
14.	Tuberculous meningitis ...	—	—	1	1
22.	Miliary tuberculosis ...	—	1	—	1
24.	Acute general septicaemia ...	—	—	1	1
27.	Bacillary dysentery ...	—	—	1	1
28.	Malaria ...	—	—	5	5
30.	Syphilis ...	—	—	1	1
33.	Influenza ...	—	2	2	4
34.	Smallpox ...	—	—	1	1
35.	Measles ...	—	—	2	2
64.	Enlarged thymus ...	—	1	—	1
64.	Status lymphaticus ...	1	—	—	1
73.	Anaemia ...	—	1	1	2
73.	Sickle-cell anaemia ...	—	—	1	1
81.	Pyogenic meningitis ...	—	—	1	1
81.	Meningitis ...	—	—	2	2
81.	Pneumococcal meningitis ...	—	—	5	5
105.	Acute upper respiratory tract infection ...	—	—	1	1
105.	Acute laryngitis ...	—	1	—	1
106.	Acute influenzal bronchitis ...	—	—	1	1
106.	Bronchitis ...	—	1	—	1
107.	Broncho pneumonia ...	—	11	40	51
108.	Lobar pneumonia ...	—	1	4	5
108.	Bilateral pneumonia ...	—	1	5	6
109.	Pneumonia -- undefined ...	—	9	6	15
119.	Dyspepsia ...	—	—	1	1
119.	Enteritis ...	—	—	4	4
119.	Diarrhoea ...	—	3	6	9
119.	Gastro enteritis ...	—	9	26	35
122.	Intussusception ...	—	1	—	1
130.	Acute nephritis ...	—	1	—	1
153.	Impetigo ...	—	1	—	1
157.	Congenital spinal malformation ...	—	—	1	1
157.	Congenital heart disease ...	—	2	3	5
157.	Hydrocephalus ...	—	—	3	3
158.	Malnutrition ...	—	2	3	5
158.	Marasmus ...	—	1	5	6
159.	Prematurity ...	—	1	—	1
170.	Traffic accident ...	—	—	1	1
181.	Burns ...	—	1	—	1
182.	Asphyxia ...	—	—	1	1
200.	Natural causes ...	—	—	1	1
		1	51	146	198

# Causes of Deaths

(Corrected for Outward Transfer)

## International Classification

### Group I. Infectious and Parasitic Diseases

International List No.	Cause	Europeans	Asians	Africans	Total
1.	Typhoid ...	—	—	3	3
6.	Cerebro-spinal meningitis ...	—	—	1	1
9.	Whooping cough ...	—	—	15	15
10.	Diphtheria ...	—	—	1	1
12.	Tetanus ...	—	1	3	4
12.	Tetanus neonatorum ...	—	—	2	2
13.	Tuberculous broncho pneumonia ...	—	—	7	7
13.	Pulmonary tuberculosis ...	—	2	41	43
13.	Tuberculous empyema ...	—	—	1	1
13.	Tuberculosis ...	—	—	4	4
13.	Bilateral Pulmonary tuberculosis ...	—	—	1	1
13.	Primary tuberculosis ...	—	—	3	3
13.	Phthisis ...	—	1	—	1
13.	Tuberculous spine ...	—	—	1	1
14.	Tuberculous meningitis ...	—	2	7	9
15.	Abdominal tuberculosis ...	—	—	1	1
16.	Pott's disease ...	—	—	1	1
19.	Tuberculous adenitis ...	—	—	1	1
21.	Tuberculous pericarditis ...	—	—	1	1
22.	Generalised tuberculosis ...	—	—	1	1
22.	Miliary tuberculosis ...	—	1	6	7
24.	Acute general septicaemia ...	—	—	2	2
27.	Bacillary dysentery ...	—	1	5	6
27.	Amoebic dysentery ...	—	—	1	1
27.	Dysentery ...	—	—	9	9
27.	Shigella flexner ...	—	—	1	1
28.	Malaria ...	1	2	14	17
30.	Congenital syphilis ...	—	—	1	1
30.	Syphilis ...	—	—	2	2
30.	General paralysis of the insane ...	—	—	2	2
30.	Aortic aneurysm ...	1	—	—	1
30.	Syphilitic aortitis ...	—	—	2	2
30.	Rupture of aorta ...	—	—	1	1
33.	Influenzal pneumonia ...	—	2	1	3
33.	Influenzal meningitis ...	—	—	1	1
33.	Influenza ...	—	3	4	7
34.	Smallpox ...	—	—	2	2
35.	Measles ...	—	1	17	18
36.	Poliomyelitis ...	1	—	7	8
36.	Polioencephalitis ...	—	1	—	1
42.	Worms ...	—	—	1	1
44.	Hodgkins disease ...	—	—	1	1
		3	17	175	195

## Group II.

### Cancer and other Tumours

International List No.	Cause	Europeans	Asians	Africans	Total
45.	Cancer of mandible ...	—	—	1	1
45.	Carcinoma of tongue ...	—	—	1	1
46.	Sarcoma of stomach ...	3	1	3	7
46.	Cancer of colon ...	1	—	2	3
46.	Carcinoma of liver ...	2	1	3	6
46.	Carcinoma of rectum ...	1	—	—	1
46.	Cancer of oesophagus ...	1	2	—	3
46.	Lympho sarcoma abdominal ...	1	—	—	1
46.	Intra abdominal carcinoma ...	1	—	—	1
46.	Carcinoma mediastinum ...	1	—	—	1
47.	Carcinoma of lung ...	2	1	—	3
48.	Carcinoma of uterus ...	3	—	—	3
49.	Carcinoma of ovary ...	1	1	1	3
50.	Cancer of breast ...	2	1	1	4
52.	Hypernephroma ...	—	—	1	1
54.	Retroperitoneal sarcoma ...	—	—	1	1
55.	Carcinomatosis ...	2	—	4	6
55.	Fibro sarcoma of chest ...	1	—	—	1
55.	Cancer of hip ...	—	1	1	2
55.	Intracerebral tumour ...	—	—	1	1
55.	Melanosis ...	—	—	1	1
56.	Haepatoma ...	—	—	1	1
56.	Bilateral ocular tumour ...	—	—	1	1
		22	8	23	53

21

## Group III.

### Rheumatism, Diseases of Nutrition and of the Endocrine Glands and Vitamin Deficiency Diseases, General Diseases

International List No.	Cause	Europeans	Asians	Africans	Total
58.	Rheumatic fever ...	—	2	—	2
58.	Rheumatic carditis ...	—	1	1	2
61.	Diabetic gangrene ...	—	1	—	1
61.	Diabetes ...	—	3	—	3
61.	Hypoglycaemia ...	—	1	—	1
61.	Diabetic hypertension ...	—	1	—	1
61.	Diabetic coma ...	—	—	1	1
63.	Myoedema ...	—	1	—	1
64.	Status lymphaticus ...	1	—	—	1
64.	Enlarged thymus ...	—	1	—	1
66.	Toxic poisoning ...	—	2	—	2
66.	Strangulated hernia ...	—	—	1	1
66.	Toxaemia ...	—	—	4	4
68.	Beri-beri ...	—	—	1	1
69.	Kwashiokor ...	—	—	13	13
		1	13	21	35

**Group IV.**

**Diseases of the Blood and Blood-forming Organs**

International			Europeans	Asians	Africans	Total
List No.	Cause					
72.	Thrombocytopenic purpura	...	—	—	1	1
72.	Haemorrhagic condition	...	—	—	1	1
73.	Sickle-cell anaemia	...	—	—	5	5
73.	Anaemia (megalocytic)	...	—	—	3	3
73.	Anaemia	...	—	4	19	23
73.	Anaemia (microcytic)	...	—	—	1	1
73.	Anaemia (severe)	...	—	—	1	1
73.	Haemolytic anaemia	...	—	1	1	2
73.	Cooley's anaemia	...	—	1	—	1
74.	Myeloid leukaemia	...	1	—	—	1
74.	Acute leukaemia	...	1	1	—	2
74.	Leukaemia	...	—	—	1	1
74.	Lymphoid leukaemia	...	—	1	—	1
75.	Splenomegalic anaemia	...	—	—	1	1
			2	8	34	44

**Group V.**

**Chronic Poisoning and Intoxication**

International			Europeans	Asians	Africans	Total
List No.	Cause					
77.	Chronic alcoholism	...	—	—	1	1
77.	Acute alcoholism	...	—	—	2	2
			—	—	3	3



**Group VI.**

**Diseases of the Nervous System**

International						
List No.	Cause		Europeans	Asians	Africans	Total
80.	Brain abscess	...	—	—	2	2
80.	Cerebral abscess	...	—	—	1	1
80.	Encephalitis	...	—	1	4	5
80.	Intracranial tumour	...	—	—	1	1
81.	Purulent meningitis	...	—	—	2	2
81.	Meningitis	...	—	1	7	8
81.	Meningitis (pneumococcal)	...	—	—	13	13
81.	Meningitis (pyogenic)	...	—	—	1	1
83.	Pontine haemorrhage	...	—	1	—	1
83.	Cerebral haemorrhage	...	6	14	2	20
83.	Cerebral thrombosis	...	1	5	—	6
83.	Sub-arachnoid haemorrhage	...	1	—	—	1
83.	Hemiplegia	...	—	1	—	1
83.	Cerebral oedema	...	—	—	2	2
83.	Cerebral apoplexy	...	—	—	1	1
83.	Intra cranial haemorrhage	...	—	1	—	1
83.	Congestive heart failure	...	1	11	5	17
83.	Excessive ventricular haemorrhage	...	—	1	—	1
83.	Malignant hypertension	...	—	1	—	1
83.	Arteriosclerosis	...	—	1	—	1
84.	Schizophrenia	...	—	—	1	1
85.	Status epilepticus	...	—	—	2	2
85.	Epilepsy	...	—	1	—	1
87.	Eclampsia	...	—	—	1	1
87.	Paralysis agitans	...	1	—	—	1
89.	Otitis media	...	—	—	1	1
			10	39	46	95

## Group VII.

### Diseases of the Circulatory System

International

List No.	Cause	Europeans	Asians	Africans	Total
90.	Acute pericarditis ...	—	—	2	2
90.	Pericardial effusion ...	—	1	—	1
91.	Subacute bacterial endocarditis	—	—	1	1
91.	Mitral aortic incompetence ...	—	—	1	1
91.	Subacute endocarditis ...	—	—	1	1
92.	Chronic endocarditis ...	—	—	1	1
92.	Endocarditis ...	—	2	—	2
92.	Aortic stenosis ...	—	—	1	1
92.	Aortic regurgitation ...	—	—	1	1
92.	Aortic incompetence ...	—	—	1	1
92.	Mitral valvular disease ...	—	—	1	1
92.	Rheumatic endocarditis ...	—	1	—	1
92.	Mitral stenosis ...	1	—	2	3
92.	Mitral regurgitation ...	—	—	1	1
93.	Myocardial infarction ...	—	5	—	5
93.	Myocarditis ...	2	1	1	4
93.	Chronic myocarditis ...	1	—	1	2
93.	Cardio vascular degeneration	—	2	—	2
93.	Toxic myocarditis ...	—	1	1	2
93.	Hypertensive heart failure ...	1	—	1	2
93.	Degenerative myocarditis ...	—	—	1	1
94.	Angina pectoris ...	1	1	—	2
94.	Coronary disease ...	—	3	—	3
94.	Coronary thrombosis ...	12	27	1	40
94.	Coronary occlusion ...	2	—	2	4
94.	Coronary infarction ...	—	1	—	1
94.	Coronary embolism ...	—	1	—	1
95.	Rheumatic heart disease ...	—	—	1	1
95.	Auricular fibrillation ...	1	—	—	1
95.	Enlargement of heart ...	—	1	—	1
95.	Ventricular fibrillation ...	—	1	—	1
97.	Arteriosclerosis ...	2	—	—	2
98.	Gangrene ...	—	1	—	1
98.	Gangrene (chest-wall) ...	—	—	1	1
99.	Mesenteric thrombosis ...	—	—	1	1
99.	Thrombosis ...	—	2	—	2
99.	Embolism ...	—	1	—	1
100.	Thrombosis of big vein ...	—	1	—	1
102.	Hypertension ...	1	13	4	18
102.	Essential hypertension ...	—	—	1	1
103.	Haemorrhagic shock ...	—	1	—	1
103.	Intra peritoneal haemorrhage	—	—	1	1
		24	67	30	121

Grou VIII.

Diseases of the Respiratory System

International						
List No.	Cause		Europeans	Asians	Africans	Total
105.	Acute oedema of larynx ...	—	—	2	—	2
105.	Acute laryngitis ...	—	—	1	—	1
105.	Tracheotomy ...	1	—	—	—	1
105.	Laryngitis ...	—	—	—	1	1
105.	Acute upper respiratory tract infection ...	—	—	—	5	5
106.	Acute tracheo bronchitis ...	—	—	—	2	2
106.	Acute influenzal bronchitis ...	—	—	—	3	3
106.	Bronchitis ...	—	—	5	—	5
106.	Chronic bronchitis ...	1	—	—	—	1
107.	Broncho pneumonia ...	—	—	38	120	158
107.	Acute broncho pneumonia ...	—	—	1	2	3
107.	Tracheo broncho pneumonia ...	—	—	—	1	1
108.	Unresolved lobar pneumonia ...	—	—	1	—	1
108.	Acute bilateral pneumonia ...	—	—	1	—	1
108.	Double pneumonia ...	—	—	—	6	6
108.	Lobar pneumonia ...	1	—	5	28	34
108.	Bilateral pneumonia ...	—	—	1	17	18
108.	Terminal pneumonia ...	—	—	—	1	1
108.	Acute bilateral lobar pneumonia ...	—	—	—	2	2
109.	Acute pneumonia ...	—	—	—	2	2
109.	Pneumonia — undefined ...	—	—	28	39	67
110.	Pleural effusion ...	—	—	—	1	1
110.	Hydropneumothorax ...	—	—	1	—	1
111.	Pulmonary embolism ...	1	—	4	—	5
111.	Pulmonary oedema ...	1	—	6	9	16
111.	Hypostatic pneumonia ...	—	—	1	—	1
112.	Asthmatic bronchitis ...	—	—	3	—	3
112.	Bronchial asthma ...	—	—	5	—	5
112.	Asthma ...	—	—	2	2	4
113.	Emphysema ...	1	—	2	—	3
114.	Lung abscess ...	—	—	—	3	3
114.	Right lung abscess ...	—	—	—	1	1
			6	107	245	358

## Group IX.

### Diseases of the Digestive System

International

List No.	Cause	Europeans	Asians	Africans	Total
115.	Severe throat infection ...	—	1	—	1
117.	Chronic duodenal ulcer ...	1	1	2	4
117.	Gastric ulcer ...	1	3	—	4
118.	Haematemesis ...	—	1	2	3
118.	Dyspepsia ...	—	—	2	2
119.	Enteritis (under 2) ...	—	—	5	5
119.	Gastro enteritis (under 2) ...	—	12	57	69
119.	Diarrhoea (under 2) ...	—	5	7	12
120.	Diarrhoea (over 2) ...	—	—	1	1
120.	Gastro enteritis (over 2) ...	—	3	7	10
120.	Enteritis (over 2) ...	—	—	6	6
120.	Chronic gastro enteritis ...	—	—	3	3
120.	Non specific enteritis ...	—	—	3	3
120.	Perforated ulcer of intestine ...	—	—	1	1
121.	Acute appendicitis ...	—	1	1	2
122.	Intestinal obstruction ...	2	1	8	11
122.	Intussusception ...	—	1	—	1
122.	Volvulus ...	—	—	1	1
123.	Toxaemia ...	—	1	—	1
124.	Biliary cirrhosis ...	—	1	—	1
124.	Cirrhosis of liver ...	—	2	6	8
124.	Portal cirrhosis ...	—	1	—	1
125.	Hepatoma ...	—	—	3	3
125.	Hepatitis ...	—	—	3	3
125.	Acute hepatitis ...	—	1	—	1
125.	Cholaemia ...	—	1	—	1
125.	Amoebic liver abscess ...	—	—	1	1
126.	Gallstones ...	—	1	—	1
127.	Cholecystitis ...	—	1	—	1
128.	Acute haemorrhagic pancreatitis ...	—	1	—	1
129.	Sub-phrenic abscess ...	—	—	1	1
129.	Peritonitis ...	—	—	1	1
129.	General peritonitis ...	—	1	7	8
129.	Biliary peritonitis ...	1	—	—	1
		5	40	128	173



**Group X.**

**Diseases of the Urinary and Genital  
System (Non Venereal)**

International

List No.	Cause		Europeans	Asians	Africans	Total
130.	Renal disease	...	1	—	—	1
130.	Acute nephritis	...	—	1	—	1
130.	Acute intra abdominal haemorrhage	...	—	—	1	1
131.	Chronic nephritis	...	—	4	5	9
132.	Nephritis	...	—	1	—	1
132.	Uraemia	...	4	9	8	21
133.	Peri nephritic abscess	...	—	—	1	1
133.	Nephrosis	...	—	—	1	1
133.	Pyelonephritis	...	1	—	1	2
133.	Kidney failure	...	—	1	—	1
139.	Ruptured uterus	...	—	—	1	1
139.	Metritis	...	—	—	1	1
			6	16	19	41

**Group XI.**

**Diseases of Pregnancy, Child Birth  
and the Puerperal State**

International

List No.	Cause		Europeans	Asians	Africans	Total
141.	Haemorrhage — abortion	...	—	—	1	1
144.	Eclampsia	...	—	—	1	1
144.	Toxaemia of pregnancy	...	—	1	—	1
146.	Post partum haemorrhage	...	—	2	—	2
147.	Cerebral haemorrhage	...	—	2	1	3
149.	Post caesarian section	...	—	—	1	1
			—	5	4	9

## Group XII.

### Diseases of the Skin and Cellular Tissue

International			Europeans	Asians	Africans	Total
List No.	Cause					
153.	Impetigo	...	—	2	—	2
			—	2	—	2

## Group XIII.

### Diseases of the Bones and Organs of Movement

International			Europeans	Asians	Africans	Total
List No.	Cause					
—	—			nil		

## Group XIV.

28

### Congenital Malformations

International			Europeans	Asians	Africans	Total
List No.	Cause					
157.	Patent ductus arteriosis	...	—	—	1	1
157.	Cephalocele	...	—	1	—	1
157.	Congenital heart disease	...	—	5	9	14
157.	Hydrocephalus	...	—	—	6	6
157.	Congenital abnormality	...	—	1	—	1
157.	Spina bifida	...	—	—	1	1
157.	Congenital deformity	...	1	—	—	1
157.	Congenital biliary obstruction	...	—	1	—	1
157.	Congenital maldevelopment	...	—	1	—	1
157.	Congenital spinal malformation	...	—	—	1	1
157.	Hirschsprung's disease	...	—	—	1	1
157.	Achondroplasia dwarf	...	—	—	1	1
			1	9	20	30

**Group XV.**

**Diseases Peculiar to the First Year of Life**

International						
List No.	Cause		Europeans	Asians	Africans	Total
158.	Small weak child	...	—	1	—	1
158.	Malnutrition	...	—	2	3	5
158.	Marasmus	...	—	3	5	8
158.	Debility	...	—	1	—	1
159.	Prematurity	...	8	75	99	182
160.	Prolonged labour	...	—	2	1	3
160.	Placenta praevia	...	—	1	—	1
160.	Delayed in 2nd stage	...	—	—	1	1
160.	Forceps delivery	...	—	—	2	2
160.	Intracranial injury	...	—	2	—	2
160.	Intracranial haemorrhage	...	1	1	—	2
160.	Cerebral injury	...	—	—	6	6
160.	Difficult delivery	...	—	—	1	1
160.	Prolapsed cord	...	—	—	1	1
161.	Haemorrhagic disease of newborn	...	—	2	—	2
161.	Haemolytic disease of newborn	...	—	1	—	1
161.	White asphyxia	...	—	—	4	4
161.	Congenital jaundice	...	—	2	1	3
161.	Asphyxia neonatorum	...	—	6	2	8
161.	Congenital oedema	...	—	1	—	1
161.	Atelectasis	...	2	1	10	13
			11	101	136	248

**Group XVI.**

**Senility, Old Age**

International						
List No.	Cause		Europeans	Asians	Africans	Total
162.	Senility	...	4	6	6	16
162.	General debility	...	—	1	—	1
162.	Senile inanition	...	—	—	1	1
			4	7	7	18

**Group XVII.**

**Deaths from Violence**

International

List No.	Cause	Europeans	Asians	Africans	Total
163.	Suicide (poisoning) ...	1	—	—	1
164.	Suicide (burning) ...	—	2	—	2
164.	Suicide (firearms) ...	1	—	—	1
164.	Suicide (hanging) ...	—	—	2	2
166.	Homicide by firearms ...	—	—	1	1
167.	Homicide by stab wounds ...	—	—	1	1
168.	Murder ...	—	1	2	3
168.	Strangulation ...	—	—	5	5
169.	Railway accident ...	—	1	2	3
170.	Traffic accident ...	14	17	38	69
173.	Air accident ...	1	—	—	1
177.	Food poisoning ...	—	1	—	1
178.	Accidental gas poisoning ...	1	—	1	2
181.	Burns ...	—	4	5	9
182.	Asphyxia ...	—	—	3	3
183.	Accidental drowning ...	—	1	10	11
186.	Accidental (fall of wall) ...	—	1	—	1
186.	Accidental fall ...	—	—	1	1
193.	Electrocution ...	1	—	—	1
195.	Fractured skull ...	—	—	1	1
195.	Compound fractured skull ...	—	1	—	1
195.	Explosion ...	1	—	—	1
		20	29	72	121

30

**Group XVIII.**

**Ill defined causes of Death**

International

List No.	Cause	Europeans	Asians	Africans	Total
200.	Natural causes ...	—	—	5	5
200.	General debility ...	—	3	—	3
200.	Acute circulatory failure ...	1	—	—	1
200.	Circulatory failure ...	—	—	1	1
200.	Emaciation ...	—	2	—	2
200.	Asphyxia ...	—	—	1	1
200.	Cardiac failure ...	1	3	2	6
200.	Cachexia ...	—	—	1	1
200.	Marasmus ...	—	—	1	1
200.	Malnutrition ...	—	1	14	15
200.	Unknown, ill defined ...	—	3	13	16
200.	Unascertainable ...	—	—	3	3
		2	12	41	55



NOTIFIABLE DISEASES

Notifiable Diseases, by Races

Diseases	Europeans	Asians	Africans	Total 1957	Totals for previous years			
					1956	1955	1954	1953
Anthrax ... ..	—	—	6	6	9	11	6	7
Beri-beri ... ..	—	—	1	1	—	—	—	—
Blackwater Fever	—	—	—	—	—	2	2	—
Cerebro-spinal Fever	—	—	22	22	106	153	30	1
Chickenpox ... ..	25	—	14	39	164	106	70	238
Diphtheria ... ..	1	2	2	5	—	5	5	13
Dysentery, Amoebic	1	—	17	18	27	18	31	56
Dysentery, Bacillary	131	9	202	342	391	466	562	564
Encephalitis ... ..	1	1	1	3	2	4	5	—
Erysipelas ... ..	—	—	—	—	—	1	3	2
Infective Hepatitis	25	1	6	32	33	21	18	—
Kala-Azar ... ..	—	—	—	—	—	—	4	—
Leprosy ... ..	—	1	1	2	6	2	3	9
Malta Fever ... ..	1	—	2	3	5	6	5	4
Ophthalmia Neonatorum	—	—	30	30	66	77	55	23
Para-typhoid ... ..	—	—	—	—	—	—	—	—
Poliomyelitis ... ..	16	17	82	115	7	19	116	20
Puerperal Fever ... ..	—	11	—	11	19	4	1	1
Relapsing Fever ... ..	—	—	—	—	—	—	1	—
Salmonellosis ... ..	1	1	6	8	9	9	31	—
Scarlet Fever ... ..	1	—	—	1	11	1	—	4
Smallpox ... ..	—	—	59	59	28	—	—	—
Tick Typhus ... ..	4	1	—	5	15	18	9	4
Trypanosomiasis ... ..	—	—	—	—	—	4	1	—
Tuberculosis ... ..	2	11	331	344	348	283	303	472
Typhoid ... ..	1	2	40	43	149	173	339	151
Totals ... ..	210	57	822	1,089	1,395	1,383	1,600	1,569

The pattern of infectious disease occurring in the City during the year presented no particularly startling feature. There was a pleasing decrease in the incidence of cerebro-spinal fever, the persistence of which in the African locations had been giving rise to some anxiety. Over the period of the report, cases came to only about 20% of the previous annual totals. Possibly this may be due to the gradual establishment of general immunity.

Diphtheria showed its usual extremely low incidence, there being only five cases.

Bacillary dysentery was slightly less than average, with 342 cases. It is a matter for speculation to what extent this really represents the incidence of the disease in the City. It might be a fair assumption that there are very many more cases than are heard of. The impression, in fact, has always been that the whole static population, of all races, is so thoroughly “salted” against the dysenteries, that they have a permanent immunity to local strains. It would be extremely interest-

ing to equate the immune titre in the blood of permanent residents in East Africa against that of new comers. Certainly, one hears of many of these who suffer an attack of gastro-enteritis a few days after their arrival.

The 115 cases of poliomyelitis, of which 82 were African, stimulated the introduction of inoculation against the disease. The very unusual feature was the large number of African cases. It can only be assumed that owing to unsatisfactory conditions in the area which was most affected (Bahati), the doses of infection received by the individuals were so massive that the customary resistance was overwhelmed. Unfortunately, for economic reasons, widespread inoculation is not at present feasible in the African areas, but it will become completely practicable if and when the Koprowski oral vaccine comes into use.

The incidence of smallpox (*variola minor*) was double the previous year, but its mild nature compensated to some extent for this.

As usual, the outstanding feature was the 344 cases of tuberculosis. It is a happy thought that next year the big drive against the disease is due to start, by no means too soon.

32

Forty cases of typhoid appeared, as against 43 in 1957, about one-third of years previous to 1957. Doubt has been felt for some time as to the value of the vast numbers of injections of T.A.B. given to the African population, but these figures would appear to provide some justification for them. On the other hand, it was discovered during the Emergency that during actual epidemic conditions at Manyani prison camp, even a high degree of inoculation appeared to give very little protection. This might, of course, have been due to heavy dosage of infection.

One other feature of the City's health in relation to communicable diseases deserves mention, because although it is a formidable factor, it is not reflected in the list of notifiable diseases—this is the incidence of virus diseases. These have been referred to in previous reports, and the problem remains with us. It could be that the fact that they are almost invariably non-fatal causes a general lack of interest in them, and insufficient research is carried out. Certainly it is known that some of the more characteristic virus diseases such as tick typhus and yellow fever receive attention, but there is a strong impression that East Africa is swept from time to time with definite strains of virus which cause a great deal of discomfort, malaise and disability. They also seem to provoke what seems to be an excessive exhibition of the antibiotics which is causing anxiety amongst those who believe that these potent weapons should be reserved for a more formidable foe.

## MALARIA AND YELLOW FEVER CONTROL

### MALARIA CONTROL

That the incidence of malaria in Nairobi City is so low can be attributed entirely to the fact that the Vector Anopheline is practically non-existent, due to an effective control over a number of years. In 1940 there were over 1,000 cases of malaria and many deaths and it would appear that it was this terrible epidemic that brought home to the authorities of that time the realisation that an effective Malaria Control Organisation was an absolute necessity.

It is still difficult however to convince the layman that without an effective organisation of this nature the same thing could happen again, the reservoir of infection is ever with us in the many Africans who travel back and forth between Nairobi and the reserves and other uncontrolled areas, and although the vector may appear to have been eliminated in Nairobi itself, the surrounding country, with the exception of small parts of the Nairobi County Area, is uncontrolled.

33

Since Nairobi County Council accepted responsibility for the area surrounding the City in 1956 the control of the City's malaria situation can be said to be under two authorities as this buffer zone must always be an integral part of the malaria control of the City, and the efficiency of that control will be reflected to some extent in Nairobi's malaria figures.

Routine larval control continued without hitch despite staff difficulties. This section somehow manages to function effectively with a minimum of staff but could do more if adequate supervisory personnel were available. It was found necessary to dismiss one of the two African Overseers in September and no suitable replacement has as yet been obtained.

The remainder however continued in the main to give good and loyal service and it is to some of these men who have given up to seventeen years service in this work that the credit must go for maintaining efficiency without a great deal of supervision.

Problems of culicine control which we have now come to consider as being in the normal course of events and inseparable from new development continued to tax our resources during the year both in

materials and man power and it is unfortunate that complaints of mosquito nuisance cannot be diverted to those who originate the nuisance, possibly action on the part of Ministry of Works and other authorities might then be speeded up.

Private streets which are little more than cart tracks are of course ideal breeding grounds for anophelines during wet weather and malaria control in these streets cannot fairly be charged to frontagers, therefore this section continue to control and the ratepayers pay. This aspect I feel is not often taken into account when questions of making up private streets are under discussion. Large parts of the Eastleigh and Kilimani areas become veritable lakes during the seasons of heavy rains, vehicles plough axle deep through the mire, diverting at very bad spots and making more and more wheel ruts to collect water and breed mosquitoes. In the particular type of clay soil of these areas this water lies for weeks and of course must be treated regularly until it dries up.

The incidence of Anopheline breeding—vector and non-vector will be seen from the following table.



# COLLECTIONS OF ANOPHELINE LARVAE

# Nairobi City Area

Months										Rainfall inches
Jan.	Nil	A. coustani								6.52
Feb.	Muthaiga area									0.61
March	Lavington estate									2.50
April	Forest reserve	A. coustani	A. coustani							7.67
May	Parklands area	A. christyi	A. coustani							10.01
June	Bernhard estate	A. coustani	A. coustani	A. rufipes						1.97
July	South of Nairobi Dam	A. gambiae	A. christyi	A. coustani	A. christyi	A. christyi	A. christyi	A. christyi	A. coustani	0.03
Aug.	Sewage works area	A. Gambiae	A. coustani	A. cinereus	A. coustani	A. coustani	A. coustani	A. coustani	A. coustani	0.55
Sept.	Lavington estate	A. coustani	A. christyi	A. coustani	A. coustani	A. christyi	A. christyi	A. christyi	A. coustani	2.28
Oct.	Dagoretti corner area	A. christyi	A. coustani	A. christyi	A. coustani	A. christyi	A. christyi	A. christyi	A. coustani	2.55
Nov.	Eastern City bound.	A. christyi	A. christyi	A. christyi	A. christyi	A. christyi	A. christyi	A. christyi	A. christyi	8.80
Dec.	Nil									2.72

TABLE

A. Gambiae Caught in Fifty-two Collecting Stations

Stations	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Eastern	1	2	—	—	4	5	6	3	2	—	—	1	24
Southern & Western	—	—	—	—	—	1	1	—	—	—	—	—	2
Northern	—	—	—	—	—	—	—	—	—	—	—	—	—
Central	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS	1	2	—	—	4	6	7	3	2	—	—	1	26

Malaria Cases and Adult Gambiae Catches by Months

<i>(Residents contracting in Nairobi)</i>													
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Europeans	—	2	—	—	—	—	—	—	1	—	—	—	3
Asians	—	1	—	—	—	1	—	—	—	—	—	1	3
Africans	6	14	11	13	19	7	8	6	11	14	18	9	136
TOTALS	6	17	11	13	19	8	8	6	12	14	18	10	142

Gambiae Catches	1	2	—	—	4	6	7	3	2	—	—	1	26
--------------------	---	---	---	---	---	---	---	---	---	---	---	---	----

Malaria

Cases notified and which were indicated as having been contracted in Nairobi numbered 142, compared with 171 in 1956. Laboratory examinations of blood smears from these cases showed that as usual most infections were malignant tertian (131), with benign tertian (9), two cases only of those notified were diagnosed on clinical grounds alone.

Distribution of these cases was as follows:—

African Estates 106, Eastleigh, Pangani and Central predominantly Asian Areas, 9. Hill Area and West of City 27—European Residential Areas. It will be seen from tables which follow however that 136 of the total were African with only 3 European and Asian cases.

Nairobi residents contracting malaria after visits to other parts of the Colony numbered 222, malignant tertian infection again being predominant, being responsible for 208 of these cases.

Residents of other areas visiting Nairobi and becoming ill with malaria contracted either at home or en-route, numbered 869 of which 792 were malignant tertian infections.

The total malaria notifications received and scrutinised by this Department therefore numbered 1233.

**Attack Rate over past Five Years**

	1953	1954	1955	1956	1957
Attack rate per 10,000	7.6	6.53	6.4	8.14	6.4

**Malaria**

Race	Cases	Attack rate per 10,000	Deaths	Death rate per 10,000
Europeans	3	1.36	1	0.4
Asians	3	0.35	2	0.23
Africans	136	11.8	14	1.2
TOTAL	142	6.4	17	0.76

**Anti-Malaria Drainage**

Clearance only of anti-malaria drains and rivers is carried out by this section, other maintenance work and new construction being under the control of the City Engineer.

Although it is never possible to have all anti-malaria drains and rivers properly clear at the same time fairly good maintenance is obtained and it has been noticed since this section took over this part of the work that complaints of overgrown rivers etc. have considerably lessened and as time goes on the work itself becomes easier by reason of being done regularly. The first clearance of vegetation after a long period of neglect was sheer hard work and consumed a great deal of time.

A start was made by means of local contract in the reconstruction of the anti-malaria drain from Buckleys Road to London Road, a stretch which was collapsing and was quite inadequate to contain the flow of water during rainy periods. This will be a big improvement but is not the end of drainage requirements in this area, other portions of the same drain are in need of reconstruction and the beautifully stone pitched portion of the Ngong River which it joins is in urgent need of extensive repairs.

In all 4,140 linear feet of new anti-malaria drainage construction was completed by the City Engineer during the year.

**Aedes (Yellow Fever) Domestic Mosquito Control**

This section had rather an unsettled existence during 1957, moving office accommodation no fewer than four times, the last move being into old temporary wooden offices outside the new City Hall. It is hoped that satisfactory accommodation will be allocated to the

staff of this section early in 1958 as this state of affairs is not really conducive to efficiency from several aspects, the most important in this case being morale.

Some difficulty is still being experienced in the recruitment of satisfactory searcher staff, so many of those seeking work merely use this sort of a job as a stepping stone to something with a higher salary and a shorter training period.

A weekly cycle of inspections was continued, resulting in the usual crop of prosecutions, 72 persons being charged and paying a total in fines of Shs. 8,766.00. The reorganisation of the City Inspectors' Department and the appointment of a City Magistrate considerably facilitated legal work during the last few months of the year and a large backlog of cases and notices were disposed of.

The number of premises to be inspected increased again by over 400 and the total number of house inspections during the year numbered 657,756 from which 10,418 collections of mosquito larvae were made—approximately one per 63 inspections, of these only 155 collections were of *Aedes* Species, the remainder being *Culex* Spp. 8,219 notices were served on the owners or occupiers of premises where mosquito larvae were found and the majority of the persons concerned took immediate action.

The following table gives further detail of mosquito breeding during the year.



# Aedes Permanent and Temporary Breeding Foci and Indices

	No. Examined	Larvae species found (times)				Larvae species found (per cent)				
		Aedes		Culex	All Species	Aedes		Culex	All Species	
		Aegypti	Anopheles			Aegypti	Anopheles			
<b>PERMANENT FOCI:</b>										
Septic Tanks	172,370	—	—	2,713	2,713	—	—	1,573	1,573	
Rain Water Tanks	17,295	8	—	45	53	0.045	—	0.260	0.306	
Gullies	521,826	—	—	235	235	—	—	0.045	0.045	
Earth Drains	152,499	1	—	607	608	0.0006	—	0.398	0.398	
Concrete Drains	713,508	—	—	288	288	—	—	0.040	0.040	
Soakage Pits	88,011	—	—	1,694	1,694	—	—	1.924	1.924	
Bath Pits and Sunken Drums	49,377	1	—	1,707	1,708	0.002	—	3.457	3.459	
Water Meters	605	—	—	102	102	—	—	16.859	16.859	
<b>Total Permanent Foci</b>	1,715,491	10	—	7,391	7,401	0.0005	—	0.430	0.431	
<b>TEMPORARY FOCI:</b>										
Tins	209,735	2	—	81	83	0.001	—	0.038	0.039	
Drums	233,061	17	—	483	500	0.007	—	0.207	0.214	
Motor Tyres	84,223	88	—	970	1,058	0.104	—	0.151	1.256	
Motor Parts	14,728	6	—	66	72	0.040	—	0.448	0.488	
Hollows	2,272	5	—	507	512	0.220	—	22.315	22.535	
Other not specified	60,765	27	—	765	792	0.044	—	1.259	1.303	
<b>Total Temporary Foci</b>	604,784	145	—	2,872	3,017	0.023	—	0.474	0.498	
<b>GRAND TOTAL</b>	2,320,275	155	—	10,263	10,418	0.006	—	0.442	0.448	

## RODENT AND VERMIN CONTROL

### RODENT CONTROL

Although rat catching naturally occupies a considerable part of the time of Rodent Control staff the emphasis is rather on control by the individual.

Each section of the City receives the attention of a rat gang at regular intervals and ten traps are set nightly in each premise for one week only. This is intended as an indication of the extent of infestation and the occupants of heavily infested premises are then invited to get rid of their rats and carry out rat proofing—or face the magistrate.

#### Trapping Commercial Area

Rooms Trapped	Rooms Infested	Index	Trapping Days	Rattus Rattus	Mice	Others	Totals
1,408	256	18.1%	204	254	181	—	435

#### Trapping Industrial Area

Premises Trapped	Premises Infested	Index	Trapping Days	Rattus Rattus	Mice	Others	Totals
334	87	26.%	188	188	43	—	231

It will be seen therefore that the figures relating to rats caught in the Commercial and Industrial Areas refer only to rats caught during inspection and are only useful as an index to infestation.

The Rodent Officer during the year served 24 notices to rat proof, all of which were complied with. In addition 16 other premises were made rat proof without resort to written notice.

A surprise check by the Rodent Officer on a local bakery resulted in 52 rats being caught by hand in as many minutes, the loss to the proprietor of a considerable quantity of foodstuffs which were contaminated by rats and the imposition of a fine of £75.

Demolition of old buildings in the City centre has considerably reduced the number of heavily infested premises and modern construction methods do not provide the harbourage for rats which was the rule rather than the exception in old types of buildings, particularly in the Bazaar area.

**Plague**

No cases of plague occurred in the City during the year.

**Rat Examination**

A random selection of rats caught each day were examined for P. Pesties with negative results. In all 3280 rats were examined.

**Rat Destruction**

The results of the year's work is shown in the following tables.

Total Kill		
Rattus Rattus	...	2,784
Rattus Natalensis	...	10,445
Arvicanthis abyssinicus	...	3,618
Mice (all species)	...	4,288
Otomys angoniensis	...	691
Others	...	377
TOTAL		22,163

**Poisoning and Gassing**

These methods are used where considered necessary and practicable and during the year accounted for an estimated kill of over 11,000 rats. No satisfactory method has been found for the safeguarding of baits from the inquisitive and mischievous young of the local inhabitants and therefore poisoning is seriously curtailed in consequence. The use of Warfarin Rodenticides in infestation of private premises where control is possible has met with the usual success and has greatly simplified disinfestation work where a great deal of travelling would normally have been involved.

**Trapping and Handcatching**

Catching by hand continued to be a profitable method of control particularly in open grassland and the following table shows results in detail.

## Handcatching in Open Areas and Premises

		Kariokor and Ziwani	Pumwani and Gorofani	Shauri Moyo	Kaloleni	Bahati	Ofafa	Mbotela	Makadara	Swamp	Ngara and Pangani	Old Abattoir	Other Areas	Handcatch in Premises	Totals
Rattus	Rattus	290	97	127	68	35	36	2	14	779	109	42	78	161	1,838
Rattus	Natalensis	1,086	194	1,067	2,562	641	2,441	138	196	674	291	40	1,045	—	10,375
Otomys	anaganiensis	32	20	88	107	64	47	27	1	151	61	2	90	—	690
Arvicanthis	abyssinicus	499	292	342	809	226	537	165	68	237	229	32	167	—	3,604
Mice		75	29	37	58	9	120	42	25	1,792	244	3	130	197	2,761
Others		83	17	32	37	10	22	8	7	26	19	9	39	24	333
TOTALS		2,065	649	1,694	3,641	985	3,203	382	311	3,659	953	128	1,549	382	19,601

Trapping in African Estates met with the usual success despite interference with traps on a grand scale. The fact that the figures for this work remain approximately at a level from year to year does indicate some measure of control. Trapping is of course augmented by one or two poisoning sessions annually for which it is difficult to accurately estimate the kill.

42

## Trapping in African Estates

	Rooms Trapped	Houses Trapped	Rooms or Houses infested	% Index	Trapping Days	Rattus Rattus	Mice	Others	Totals
Kariokor and Ziwani	1,043	—	43	4.1	72	45	55	—	100
Pumwani and Gorofani	—	549	267	48.6	120	63	221	—	284
Starehe	142	—	24	16.9	36	24	11	—	35
Shauri-Moyo	—	1,079	245	22.7	152	32	218	—	250
Kaloleni	970	—	47	4.8	40	6	44	—	50
Bahati	2,054	—	71	3.4	136	2	86	—	88
Mbotela	2,326	—	268	11.5	96	20	377	—	397
Ofafa	1,537	—	122	7.9	96	2	153	—	155
Makadara	1,119	—	72	6.4	58	20	95	—	115
TOTALS	9,191	1,628	1,199	—	806	214	1,260	—	1,474



## RAT CATCHING ON REPAYMENT

Fees of Shs. 1,350/- were collected for this work with the results shown in the following table.

## Private and Special Trapping and Handcatching

Rattus Rattus	...	290
Rattus Natalensis	...	70
Arvicanthis abyssinicus	...	14
Otomys	...	1
Mice	...	43
Others	...	4
		<hr/>
Totals	...	422

## VERMIN CONTROL

Disinfestation work on repayment is shown in the following table. Fees collected amounted to Shs. 28,768/61.

Sales of insecticides prepared by this Section realized Shs. 15,871/50.

## Disinfestations

43

[illegible]

LABORATORY

The following are details of work carried out in 1957.

Malaria Slides

	St. Rings	St. Crescent	B.T.	Q.T.	Filaria	Negative	Total
January	79	31	17	—	—	910	1037
February	78	21	6	—	—	884	989
March	110	18	14	—	1	816	959
April	112	8	15	—	—	844	979
May	231	25	14	—	1	1061	1331
June	175	30	19	—	—	1166	1390
July	188	42	27	—	—	1187	1444
August	127	19	20	—	2	882	1050
September	124	27	22	—	—	1024	1197
October	108	23	31	1	—	1021	1184
November	70	19	15	—	1	935	1040
December	62	29	15	—	1	982	1089
TOTAL	1464	292	215	1	6	11711	13689

44

Stools

Smears

Ascaries	...	1.772	Positive G.C.	...	116
Ancylostoma	...	380	Negatives	...	5.966
Taenia	...	246			
Trichuris	...	140	TOTAL	...	6.082
Sch. Mansoni	...	43			
Oxyuris	...	9			
Stronglyloides	...	30			
E. Colicysts	...	445			
Flagellates	...	4	Positive Sch. Haemt.	...	9
Negatives	...	4.685	Negatives	...	78
TOTAL	...	7.754	TOTAL	...	87

Urines

Sputums

Positive T.B.	...	2
Negatives	...	46
TOTAL	...	48

**Blood Counts**

Total Blood Counts	...	12
Differential Counts	...	10
		<hr/>
TOTAL	...	22
		<hr/>

**Whole Total**

Malaria Slides	...	13.689
Stools	...	7.754
Sputums	...	48
Smears	...	6.082
Urines	...	87
Blood Counts	..	22
Rats for Plague. etc.	...	3.280
		<hr/>
TOTAL	...	30.962
		<hr/>

## SANITARY ADMINISTRATION

During the year it was found necessary to reorganise the Health Inspectorate staff, with a view to making the most effective use possible of available personnel. Two factors in the City are causing us to focus more and more attention on this type of staff. One is the steady growth of the City and its population, necessitating more personnel on the ground to keep pace with the work, and the second consideration, a rather similar one, is that the larger the population grows in relation to our present establishment, so the difference between the ratio of Inspectors to population as compared with other cities becomes more marked.

Nairobi has an estimated population of some 222,000, and an analysis of the situation in a selection of British and South African towns shows that at least one fully qualified Inspector per 10,000 of the population is considered necessary, and all towns with a population of over 100,000 have, in addition, a Chief Inspector and a Deputy Chief Inspector. On this basis, Nairobi requires a minimum of 24 Inspectors as compared with the 12 (plus 5 Assistant Health Inspectors) now engaged.

46

The position which has developed at present is that while complaints from the public are not a formidable feature, a large volume of routine inspection, which is most desirable, has to be neglected. This type of inspection is the very essence of effective control. It is the equivalent of the policeman on the beat, and the only satisfactory method of preventing breaches of the law and of ensuring good hygienic practice. It also provides one of the most profitable means of health education, for here theory is seen in practice.

Since our limited resources do not enable all the desirable controls to be exercised all of the time, it has been found necessary to resort to what may be termed "periodical specialisation". During 1957 particular attention was directed to improving the standard of restaurants, tea rooms and eating houses. With the wholehearted support of the Council's Eating House Committee, minimum specifications were drawn up and proprietors were granted six months in which to put their premises in order. The time limit was not rigidly enforced, but many complied immediately. Some made slow progress, and others did nothing until their applications for renewal were refused. The improvement in these premises in twelve months has been nothing short of amazing, and it will be a tragedy if staff shortage makes it impossible to ensure that the present standard is maintained.





*THE OLD WAY*





*A GRADE I RESTAURANT*

Other problems, however, are of a less specific character and not susceptible to 'blitz kreig' tactics. Grogan Road provides a good example. This area, developed only within the last six years, has rapidly deteriorated into a slum. Long lines of derelict vehicles block the streets, the unmade lanes are deep in mud and litter, and the Swamp area is filled with old cars and junk of every description. Unauthorised use of premises is widespread, shops being used as garages, stores as workshops, basements and even w.c. compartments as living accommodation.

From time to time the junk is removed by the Council, the cost being met from the sale of the metal recovered; action is taken in conjunction with the Building Surveyor for the demolition of unauthorised structures and misuse of premises, but the problem recurs at a greater speed than action through the courts can be taken to achieve a remedy.

Here is a problem which can be solved much more effectively by the public-spirited citizen than by the official, and yet it seems that only by the imposition of heavy penalties can any measure of civic responsibility be imparted to those who for personal gain wilfully disregard the laws of the City and the laws of common decency.

There are other problems too, the key to which lies with the individual. Early in the year, Council was about to make a decision regarding the installation of sewers in the Pangani and Eastleigh areas. Under normal circumstances, the size of the sewer would be such as to deal simply with the discharge from the water closets and the kitchen and bath wastes, leaving the surface water from the roofs and yards to be led into the roadside stormwater drain. But as a result of past experience, this Department felt bound to warn the Council that failure to permit yard washings to discharge into the foul sewer was likely to lead to serious fouling of the roadside drain. Why? Simply because it is the common practice for certain sections of the public to permit and even encourage their infants to defaecate anywhere in the yard, and then dispose of the excrement by throwing water over the yard surface.

In view, however, of the fact that the cost of providing larger sewers was in the region of 1½ million pounds, Council not unnaturally, decided against it, so that the advantages of the long-awaited sewer may well be seriously offset by the debased behaviour of the few.

Another aspect of life in the City periodically claims our attention, and that is the custom of bringing in large numbers of live goats for certain annual festivals, and slaughtering them in domestic dwellings.



It is a characteristic of British administration that the practices and beliefs of minorities are viewed with benevolent tolerance, but a gesture from the community concerned in voluntarily discontinuing this practice, distasteful to many, would be an act of grace.

The fact is that a custom which would be inoffensive in primitive conditions becomes less tolerable in crowded urban surroundings.

It is, in fact, this lack of consideration for one's neighbour that lies at the root of many of our troubles. Another example is the behaviour of certain occupants of flats and tenement dwellings, where services are used in common. How frequently is it found necessary for an Inspector's time to be taken up in trying to find out who disfigured the staircase wall, who put rubbish in the yard instead of in the refuse bin, or who threw waste water out of the window? It may well be that such behaviour will lead to the compulsory establishment of a caretaker in every multiple dwelling, with a consequent increase in rents.

So far, only the failings of the public have received comment, but Councils, Governments (and possibly officials!) are not entirely beyond criticism. Reference has been made in an earlier section of this report to the large number of dilapidated and derelict public properties which disfigure the City. Council-owned properties, including markets, the native brewery and beer shops, African eating houses and dairies have also come in for their share of criticism during the year, but most of these are now being brought up to standard. One major problem, not yet resolved, is the maintenance of the many acres of open spaces and road reserves acquired by the Council. It is no thrill to a sanitarian to see miles of bougainvillea emerging from precision-cut turf in one part of the City when he knows there are acres of dense bush, uncut grass and poisonous weeds in other parts providing breeding places for rodents, snakes and mosquitoes, not to mention hiding places for thieves and robbers, and serving as public latrines.

It is not surprising that those citizens who receive notices threatening prosecution if they do not clear their plots within fourteen days often suggest that the Council should be the first to set a good example instead of being one of the worst offenders.

The financial implications of maintaining these open spaces in good condition are very formidable indeed, and it would be unreasonable to expect vast sums to be spent in this way. The Council is, therefore tackling the problem rationally along several lines. One is to secure the development of the land as parks or open spaces as soon as possible. Another, to obtain more effective and rapid mechanical



devices for clearing it, and yet another, to cause landfills where ground may be low lying and capable of reclamation. By following a steady programme of this kind, the problem can ultimately be liquidated.

It would be unfair to conclude this section without reference to some of the things which have been achieved during the year. Mention has already been made of eating houses, but another item which will be noted in the statistics is that 166 food shops were provided with wash basins fitted with hot and cold water. It is perhaps surprising that this elementary requirement has been lacking for so long in so many places where food is handled, but in future no food shop licences will be granted until this requirement has been met.

It is also gratifying to report that the Liquor Licensing Board is taking increasing cognizance of reports made by this department. 326 inspections in connection with liquor licences were made last year, and due regard is given to the representations made by the Chief Health Inspector, who attends every licensing session on behalf of the Council. The co-operation of this Board plays a large part in raising the standard of premises where liquor is sold and, incidentally of food premises in general.

The general picture which emerges at the end of another year is one which shows some progress, but with much still to be done, some of it still almost in the nature of pioneering, for in many quarters the principles of hygiene are scarcely understood and certainly not appreciated. We look forward to the time when the provision of sewers, the building of sufficient dwellings and the allocation of sufficient funds will make the elimination of the black spots such as Pumwani a reality instead of a dream.

## Summary of Health Inspectors' Work

### Inspections :

Dwelling Houses	...	...	...	...	12,543
Public Buildings	...	...	...	...	151
Offices and Trade Premises	...	...	...	...	1,407
Other Buildings	...	...	...	...	520
Open Spaces, Lanes, etc.	...	...	...	...	4,877
Camps	...	...	...	...	57
Laundries	...	...	...	...	163
Offensive Trades	...	...	...	...	99
Second-hand Clothing Dealers	...	...	...	...	8
Barbers and Hairdressers	..	...	...	...	268
Swimming Pools	...	...	...	...	85
Aerated Water Factories	...	...	...	...	162
Bakeries	...	...	...	...	177
Butchers	...	...	...	...	1,220
Dairies and Milkshops	...	...	...	...	501
Eating Houses, Tearooms and Restaurants	...	...	...	...	2,283
Fishmongers	...	...	...	...	110
Food Factories	...	...	...	...	372
Grocers	...	...	...	...	3,083
Hotels and Bars	...	...	...	...	336
Markets	...	...	...	...	374
Vegetable Dealers	...	...	...	...	927
Miscellaneous	...	...	...	...	1,973

50

### Licensing Inspections :

Trade premises	...	...	...	...	3,658
Taxicabs	...	...	...	...	217
Food Carts	...	...	...	...	82
Liquor Licensing	...	...	...	...	326

### Miscellaneous :

Complaints investigated	...	...	...	...	527
Notices served — Statutory	...	...	...	...	1,104
Informal	...	...	...	...	1,630
Defects remedied	...	...	...	...	1,896
Foodshops provided with washing facilities	...	...	...	...	166
Premises connected to new sewers	...	...	...	...	92

### Legal Proceedings :

Public Health Ordinance	...	...	...	...	24
Public Health (Food) Rules	...	...	...	...	3
Milk and Dairies Regulations	...	...	...	...	4
Building Bylaws	...	...	...	...	5
General Bylaws	...	...	...	...	156*
Withdrawn or dismissed	...	...	...	...	9
Fines	...	...	...	Shs.	33,141/-*
Costs	...	...	...	Shs.	415/-

\*includes 139 cases taken in conjunction with Licensing Officer.

**Unsound Food Condemned :**

							Lb.
Biscuits	...	...	...	...	...	...	226
Cereals	...	...	...	...	...	...	230
Cheese	...	...	...	...	...	...	60
Coffee	...	...	...	...	...	...	100
Confectionery	...	...	...	...	...	...	1.575
Fat	...	...	...	...	...	...	180
Fish	...	...	...	...	...	...	30
Fruit	...	...	...	...	...	...	4.929
Grain and Pulses	...	...	...	...	...	...	4.670
Meat	...	...	...	...	...	...	35
Miscellaneous	...	...	...	...	...	...	3.038
Pharmaceuticals	...	...	...	...	...	...	61
Sauces and Pickles	...	...	...	...	...	...	23
Sweets	...	...	...	...	...	...	987
Tinned Fish	...	...	...	...	...	...	1.245
Tinned Fruit	...	...	...	...	...	...	1.650
Tinned Meat	...	...	...	...	...	...	352
Tinned Milk	...	...	...	...	...	...	10.000
							<hr/>
							29.391
							<hr/>

**Poultry :**

Inspected	...	...	...	...	...	...	183.170
Condemned	...	...	...	...	...	...	286

## Legal Proceedings in Connection with Food Offences

1. Public Health Ordinance.	Prosecutions	Convictions	Penalties
			Shs.
(a) Selling or depositing unsound food.	2	1	1,000/-
(b) Failing to protect foodstuffs ...	3	3	1,100/-
2. Public Health (Food) Rules.			
Using unlicensed premises ...	3	3	1,250/-
3. Nairobi Municipality (General) Bylaws.			
(a) Using unlicensed premises	52	52	7,397/- Also 14 days imprisonment.
(i) Provision shops and stores	36	36	3,410/- Also 7 days imprisonment.
(ii) Vegetable dealers ...	6	6	1,665/- Also 7 days imprisonment.
(iii) Bakeries ...	6	6	2,605/-
(iv) Butcheries ...	14	14	2,840/-
(v) Eating houses ...	3	3	1,100/-
(vi) Restaurants ...	1	1	10/-
(vii) Tea Rooms ...	1	1	600/-
(viii) Fishmongers	16	16	2,869/-
(ix) Ice cream dealers ...	3	3	3,920/-
(x) Ice factories ...	1	1	40/-
(xi) Butchers' vans	4	3	900/-
(b) Selling uninspected meat	1	1	14 days imprisonment.
(c) Dirty butchery ...			
4. Milk and Dairies Regulations.			
Using unregistered premises ...	4	4	675/-



## FOOD INSPECTION

### MILK

The popularity of Tetrapak milk, the introduction of which was referred to in the 1956 annual report, has continued to increase, with the result that far fewer complaints are now received in respect of watered or dirty milk. This, however, has not been due entirely to Tetrapak, but also to a gratifying improvement in the attitude of the registered dairyman, in modernising premises and equipment and exercising greater supervision over dairy and delivery staffs.

53

It is very pleasing to report that two low standard dairies have closed down, two have left old premises and moved into spacious modern premises with up-to-date automatic equipment, and one more new dairy is ready for occupation as soon as the necessary machinery can be installed.

We are still faced, however, with the problem of milk sellers in the African locations, where many of the population neither appreciate the advantages of, nor desire to receive their supply of milk from highclass premises. It is hoped that by next year some considerable progress will have been achieved towards the standard of dairy now operating in the City itself.

Considerable co-operation from the two wholesale milk organisations in Nairobi has helped to keep a very strict check on the quality of raw and pasteurised milk reaching the City, as will be seen from the tabulated results of tests.

Mineral Water Factories. One mineral water factory was closed down during the year, and now all the remaining businesses are operating in reasonable premises at a satisfactory hygienic standard.

TABLE

1. Resazurin Tests

Month					Category			Total
					A	B	C	
					4—6	1—3½	0—½	
January	...	...	...	...	222	33	1	256
February	...	...	...	...	185	6	4	195
March	...	...	...	...	226	42	16	284
April	...	...	...	...	659	109	28	796
May	...	...	...	...	583	100	32	715
June	...	...	...	...	1,017	33	5	1,055
July	...	...	...	...	1,209	13	2	1,224
August	...	...	...	...	912	9	4	925
September	...	...	...	...	938	27	5	970
October	...	...	...	...	596	10	6	612
November	...	...	...	...	570	14	8	592
December	...	...	...	...	83	2	—	85
TOTAL					7,200	398	111	7,709

2. Phosphatase Tests

54

Efficiently Pasteurised	Inefficiently Pasteurised	Not Pasteurised	Total
50	1	—	51

3. Estimation of Fat and Non-Fatty Solids

					Satisfactory	Unsatisfactory	Total
Milk	...	...	...	...	852	45	897
Cream	...	...	...	...	12	—	12
TOTAL					864	45	909

Samples Submitted by Food Inspector to Government Bacteriologist

Article					Satisfactory	Unsatisfactory	Total
Aerated Waters	...	...	...	...	145	1	146
Water	...	...	...	...	260	7	267
Food	...	...	...	...	5	—	5
Ringer's Rinse	...	...	...	...	3	2	5
Swimming Pools	...	...	...	...	22	5	27
TOTAL					435	15	450

## Samples Submitted by Food Inspector to Government Chemist

Article				Satisfactory	Unsatisfactory	Total
Sherry	...	...	...	—	1	1
Coffee and Chicory	...	...	...	1	—	1
Coffee	...	...	...	2	—	2
Sausages	...	...	...	2	1	3
Sauce	...	...	...	1	—	1
Pickles	...	...	...	1	—	1
Margarine	...	...	...	1	—	1
Butter	...	...	...	2	—	2
Jam	...	...	...	1	—	1
Sugar	...	...	...	3	—	3
Pepper	...	...	...	1	—	1
Fruit Squashes	...	...	...	23	—	23
Millet	...	...	...	1	—	1
TOTAL				39	2	41

## EXTRACT FROM THE ANNUAL REPORT OF THE CITY ENGINEER

**Anti-Malarial Works.** The canalisation of 1,850 lin. ft. of the L.R. 37 anti-malarial drain between Buckleys Road and London Road was carried out, together with the construction of a new reinforced concrete box culvert under Buckleys Road.

1,840 lin. ft. of the outfall drain in Ring Road (East) near Asian Civil Service Club were reconstructed.

400 lin. ft. of 18" diameter piped drainage were constructed from Hendon Close to the Nairobi River.

An earth drain from Kabete Waterworks to the Spring Valley Stream was constructed to alleviate nuisance caused by wash-out water discharged from Kabete Waterworks.

### SEWERAGE AND SEWAGE DISPOSAL

56 **General.** I am pleased to report that the decline, due to staff shortages, in the annual rate of construction of foul sewerage since 1954 has been arrested and the output increased considerably during 1957. 15,664 feet of foul sewers of various sizes were constructed by Council during the year compared with only 4,028 feet during 1956. It is expected that this rate of construction will be exceeded during 1958.

Due to shortage of design staff four large schemes in Eastleigh, Pangani and Parklands/Westlands were placed in the hands of the Council's Consultant Engineers in 1956, but the designs were not completed in time to start construction during 1957. However, these designs are now nearing completion and it is expected that construction will commence on all four schemes during the first three months of 1958.

Schemes designed in my office during 1957 are listed below:

- (i) Mbotela Employers Housing sewerage.
- (ii) Nairn Lane sewer.
- (iii) L.R. 37 Trunk sewer extension.
- (iv) Delamere Avenue Relief Sewer.
- (v) Bahati sewerage and conversion of closets.
- (vi) Mbotela Council Housing Sewerage.
- (vii) Employers Housing east of Bahati sewerage.



- (viii) Parklands sewerage scheme Phase I.
- (ix) Sclaters Road/Pratap Road.
- (x) Mbuyu Lane Sewer.
- (xi) Hill Area sewerage.
- (xii) Joint Govt./City Council African Housing Scheme, Phase II.

The construction of the first four schemes was completed during 1957. Construction of scheme (v) has been delayed pending agreement between the Government and the City Council on financial aspects. Scheme (vi) was postponed as was scheme (vii). It is intended that construction work on schemes (viii), (ix) and (x) will commence during the early part of 1958. Construction work on scheme (xi) has already commenced. Commencement of construction of scheme (xii) will depend on the progress made on the housing scheme it is to sewer.

**Sewage Disposal Works.** The extensions to the Eastleigh Sewage Disposal Works are virtually complete and producing a more satisfactory effluent.

The first stage of the proposed Boundary Sewage Disposal Works is at present being designed by the Council's Consulting Engineers and it is expected that construction will commence during 1958.

57

## **WATER SUPPLY**

### **Sources of Supply :**

- (a) Sasumua Reservoir commenced the year with about 1,750 million gallons storage. The water level has fluctuated a few feet below the spillway throughout the year. 1,328,348,000 gallons have been supplied to the City at an average daily rate of 3,639,309 gallons.

Construction continued on the outstanding works programme and a large proportion of these items have been completed. Council's Consulting Engineers, Messrs. Howard Humphreys and Sons, are carrying out trial boring in connection with the new Treatment Plant.

- (b) Ruiru Reservoir continued to overflow during the year with a maximum storage of 656,000,000 gallons. 974,060,000 gallons have been supplied to the City at an average daily rate of 2,668,657 gallons.

Maintenance work has continued throughout the year and all pipework and ancillary gear has been cleaned and painted in order to prevent corrosion.

- (c) Kikuyu Reservoir has been maintained at a constant level throughout the year and has not been allowed to overflow. 346,540,000 gallons have been supplied to the City at an average daily rate of 949,445 gallons.
- (d) Nairobi Reservoir has remained closed down except for routine inspection and the necessary maintenance of plant. All rainfall records are now kept by the Ministry of Works. No decision has yet been reached as to the details of the future use of the water area and surrounds.

**Quality of Water.** The quality of the water delivered to the City has been maintained at a high standard and the colour is consistently below 5 Hazen units.

249 samples of mains water were taken for bacteriological testing and only one failed to reach the standard 'highly satisfactory'. This sample was re-taken and proved to be 'highly satisfactory'.

**Delivery and Consumption.** The total quantity of water treated and delivered into Council's mains during 1957 was 2,648,948,000 gallons on an overall average of 7.26 million gallons per day.

58

The City's total population is estimated at 220,000, and on this basis the average consumption per head of population had risen to 33.6 gallons by the end of the year.

The average for 1957 was 33.0 gallons per head.

### **Building Activity**

- (a) Building plans dealt with numbered 29 more than the preceding year, though in value were less by £292,335.
- (b) Plans approved show that residential development accounts for approximately 46% of the total cost, commercial development 23%, industrial development 15%, with miscellaneous making up the remainder.
- (c) 1,604 plans at a total value of £8,557,016/6/- were passed during the year.

**Ambulance Service.** Total number of calls received for the services of the ambulance based at Fire Service Headquarters was 299, an increase of 47 calls as compared with 1956, and an increase of 74 calls as compared with 1955.

**Classification of Calls :**

				1957	1956	1955
Patients				195	179	144
Europeans	...	...	...	94	73	81
Asians	...	...	...	10	—	—
Africans	...	...	...			
TOTAL				299	252	225

**Mileage :**

				1957	1956	1955
Europeans	...	...	...	1,694	1,510	1,327
Asians	...	...	...	627	519	518
Africans	...	..	...	80	—	—
TOTAL				2,401	2,029	1,845

Police requests	...	...	...	92
TOTAL	...			2,493

Revenue from Ambulance

hire charges : £480.4.0 £405.16.0 £369.0.0

59

**Public Cleansing.** The year has been an eventful one, witnessing the submission of two reports by the Organisation and Methods Officer on the working of the Cleansing Section. Consequent upon Report No. 1, dealing with Refuse Removal and Disposal, and coinciding with Report No. 2, dealing with Scavenging, various reorganisations have been and are taking place.

One of the biggest difficulties has been with the articulated vehicles which in the wet weather experienced have repeatedly become bogged on unmade roads. Services have been disrupted, resulting in an inefficient service, added expenditure, and, worst of all, a dissatisfied public. It is intended in 1958 to replace a certain number with rigid type vehicles.

**Refuse Removal.** Refuse is collected three times a week in all areas, except the central area where collection is made every night except on a Sunday.

**Refuse Disposal.** As the system of composting in use was proving to be insanitary and uneconomical, refuse is now disposed of by controlled tipping. This is proving to be most satisfactory and the use of insecticides has been practically eliminated.

**Scavenging.** The scavenging labour force has been reorganised. A big reduction was effected in the labour strength and the work load is now carried out by gangs working in districts as opposed to individuals. Each gang is under immediate headman supervision.

As an experiment, as well as a measure of economy, steet washing has been discontinued, and observations are being made to determine the effect of this policy.

**Night Soil Collection and Disposal.** The very nature of this service makes it the most difficult to administer, and although it functions fairly satisfactorily, the complete answer to the various problems is expansion of water borne sanitation. This the Department is now well geared to undertake but shortage of capital funds renders progress over the next few years less than it might be.

**Conservancy — Exhauster Service.** Particularly is the present type of vehicle unsuitable in this service, and serious disruption is caused in wet weather. A further disturbing factor is the number of leaking conservancy tanks in private premises which fill up with sub-soil water in wet weather. Steps are being taken in this connection. As with the Night Soil Service, progress in further sewer construction will greatly alleviate the difficulties met in the Exhauster Service.

**Labour Force.** The output of labour employed by the Cleansing Section is improving with reorganisation. The biggest problem is drunkenness and absenteeism after each monthly pay day.



## STATISTICS :

### (a) Refuse Removal

Total daily collections	..	...	...	tons	63,220
Special removals	...	...	...	Loads	265
General scavenging	...	...	...	Loads	5,442
Derelict vehicle bodies cleared	...	...	...	Number	111
Carcase collection—Vet. Clinic	...	...	...	Number	892
Others	...	...	...	Number	351
Street Washer (discontinued Sept.)	...	...	...	Loads	1,637

### (b) Exhauster Removals

Conservancy Tanks	...	...	...	Loads	19,229
Waste Water Pits	...	...	...	Loads	9,352
Septic Tanks	...	...	...	Loads	1,246

### (c) Bucket Service

Conservancy Lorries	...	...	...	Loads	2,064
Small Trailers (inc. Army)	...	...	...	Loads	935

### (d) Choked Drains Cleared

African Estates	...	...	...	...	979
Other areas	...	...	...	...	505

## EUROPEAN CHILD WELFARE

The year under review was the tenth of the European Child Welfare Section's existence, and was noteworthy not only for the completion of the decade, but by reason of the outstanding progress achieved during the twelve months. The overall increase in attendance at clinics was the greatest recorded in a single year, a rise of more than 3,800 over the preceding year's total, and a clear demonstration of the enormous need and demand for the Section's work.

### STAFF

Dr. Philippa Gaffikin was, throughout the year, Medical Officer in Charge, and also supervised the health of the children attending Parklands and Woodley Day Nurseries.

An establishment of two full-time health visitor posts was made permanent from the beginning of the year, and the beneficial effect of the increase is very apparent in the record of the year's work. Mrs. Sullivan and Mrs. Dempster, until she resigned on December 8th to take up domestic welfare duties, did excellent work throughout the year.

### BUILDINGS

**Parklands Clinic.** 1957 was the first complete year during which the clinic sessions could be held in the new premises. The level of attendances reached during the latter part of 1956 was exceeded, and the layout and building proved fully able to carry the load, and indeed as satisfactorily as had been hoped, which is saying a great deal. The final finishings, notably the provision of padded and upholstered seating, were completed during the year.

**Woodley Clinic.** The accommodation for this clinic's activities was grossly overcrowded as far back as 1956, and enlargement was urgent in 1957. As the numbers increase, the need for extra accommodation increases. This should now be a top priority for consideration for 1959 estimates. The need for European clinics should be given as much consideration now as clinics for other sections.

### CLINIC ACTIVITIES

**Clinic Sessions.** Sessions were held through the year on the established pattern of two a week in each area, with the Medical Officer present at one of them for each district, and that "doctor-session" continued to a later hour to allow for greater numbers. Over-

all monthly attendances rose steadily, reaching four figures in July, and stayed about the four-figure mark for the balance of the year. The increase affected both clinics and in particular the "doctor-sessions". It was relatively greater at Parklands, compensating for the lag which occurred during the building operations in 1956.

Parents whose children were not in need of a doctor's advice were encouraged to select the other session, with a view to relieving congestion and to reduce waiting time, but naturally this course was not always possible. Maximum pressure was on Wednesday afternoons at Parklands, where attendances were persistently over 100 and the duration of the clinic period was more than doubled.

Valued and valuable assistance in this difficulty was rendered by senior pupils of the Kenya High School, who came regularly during the three terms of the school year in groups of three or four to help with weighing, records and clerical work. This voluntary and public-spirited action displays a noteworthy sense of civic obligation in all concerned.

Pressure of numbers caused much congestion in the clinics, and unavoidable waiting was at times prolonged. Parents were extremely charming about the difficulties created by the rise in attendances, and their forbearance and co-operation were deeply appreciated. Waiting time was not always wasted time. It was observed that the conversation between groups of mothers quite often brought to light problems of real moment which were later discussed with the health visitor or medical officer. Perhaps parents may remember this during some particularly wearying wait!

**Health and Welfare.** The European Child Welfare Section was able to provide a good "cover" of health supervision for Nairobi's infants: direct contact was made with nearly 100% of those born in the city and almost all of them became clinic attenders. Only in the case of an infant born elsewhere, and consequently lacking the Nairobi birth notification to guide the health visitor to the household was contact likely to be delayed or missed. Such instances were few and far between.

The health, nutrition and progress of infants attending the clinics was very satisfactory, and very satisfying to the staff. The advice given to mother was based on the principle of breast milk plus early mixed feeding, now established as the method of choice in infant management. Nairobi infants are now more often breast fed than bottle fed, thanks to the early introduction of solid food reducing the strain on the mother's physique. Infants arriving from England were all too often bottle fed, having been kept on the breast only until maternal exhaustion brought about a failure of lactation.



The well being of toddlers and the pre-school group was satisfactory on the whole, though an epidemic of mumps was widespread in January and February, and during an outbreak of measles and chickenpox in the last quarter of the year there were cases of measles much more severe than is usual in Kenya. "Asian flu" attacked all ages during the epidemic in June, July and August, with a peak incidence in the first fortnight of July, and there were sporadic occurrences about every five to six weeks during the remainder of the year. It was a very debilitating ailment, and consequent lowering of resistance may well have been the reason for the severe cases of measles.

Efforts to regulate the activities of those undertaking the care of young children for gain suffered frustrating delay, and the matter continued to be a cause for concern as meanwhile, more and more "baby-minding" establishments were set up at levels from good to poor. Even these last — as far as such were known to the health visitors — were still a little better than unsupervised care by a nannie or ayah, but the margin of superiority was often small, whereas the financial difference was large and scarcely justifiable.

## HOME VISITING

64

The health visitors carried out an extensive programme of home visiting during the year and, to quote their report, "It is a great pleasure once again to record that we were made most welcome at every home we visited: in fact our visits were looked forward to by both mothers and children".

The home visiting programme for infants was again based on an initial visit in hospital, and again most sincere thanks are tendered to the Matrons and Staffs of the Princess Elizabeth Hospital and the Nursing Homes, for their continued co-operation. A follow-up visit was made soon after mother and baby returned home, and thereafter at routine intervals or as need dictated.

Visits to toddlers were also carried out in the normal routine, according to age and need, with particular attention to those left with nannies or ayahs, or in the care of creches or baby-minders. Some few toddlers and an occasional infant were located whose parents had been unaware of the child welfare services available to them, but such were few, and mainly new arrivals in the Colony. Neighbourly helpfulness usually ensured contact without much delay. Failure to make use of the service was more often due to apathy or neglectfulness than to ignorance of its existence.



Systematic visiting by districts was carried out by each health visitor in her own section of the city as frequently as her routine programme would permit. Such sector visiting is of the greatest value in maintaining contact with substandard or neglected children, where there is scant parental effort and much scope for improvement. Although the appointment of a second health visitor in the later part of 1956 made possible an improved visiting schedule, the appointment had itself been tardy in relation to need and area visiting was much in arrear. Hard work in the first half of 1957 improved the position, but the second half brought such a brisk rise in all the routine commitments that both health visitors were fully occupied in merely keeping the urgent visits up to date. Large areas of new residential building all over the city foreshadow large numbers of new young families, and it is evident that a further increase in staff may be necessary.

## **OTHER ACTIVITIES**

**Lady Northey Home and Mothercraft Training Centre.** At the beginning of the year the Medical Officer was asked to act as the City Council representative on the Committee of the Lady Northey Home, and most willingly agreed. This old-established institution fills a real need in the life of Kenya's less fortunate children, providing residential accommodation for infants and toddlers where parental care is absent or inadequate.

**Day Nurseries.** In addition to the normal medical supervision of children attending the City Council's Day Nurseries, a special investigation of Day Nursery diets was undertaken by the Medical Officer in the early part of the year. It was initiated in response to an enquiry regarding possible bulk buying of foodstuffs, and the findings indicated that bulk buying would be both feasible and advantageous.

## STATISTICAL RECORD

### Attendances

			Parklands	Woodley	Total
0 — 1 year	...	...	3,370	2,403	5,773
1 — 6 years	...	...	2,551	1,357	3,908

### New Registrations

0 — 1 year	...	...	317	229	546
1 — 6 years	...	...	376	147	523

### Immunisations

Vaccination	...	...	395	276	671
Diphtheria	...	...	63	46	109
Whooping-cough	...	...	36	21	57
Diphtheria/whooping-cough			580	445	1,035
T.A.B.	...	...	113	27	140

### Home Visits

			Hospital	Home	Total
First Visits	...	...	797	452	1,249
Revisits	...	...	—	6,680	6,680

### Comparative figures — 5 year period

	1953	1954	1955	1956	1957
Attendance for advice etc.	3,848	3,722	5,990	6,184	9,681
Vaccination	307	287	428	609	671
Diphtheria	487	122	172	64	109
Whooping-cough	339	523	9	17	57
Diphtheria/whooping-cough	—	219	548	842	1,035
T.A.B.	428	74	336	119	140
Totals	5,409	4,947	7,483	7,835	11,693

It may be of interest to compare the work done in 1957, as laid out in the above report, with the report of the European Child Welfare Section extracted from the Annual Report of 1947:—

### “ STATISTICAL RECORD 1947

#### “ EUROPEAN CHILD WELFARE

“ Child welfare clinics have been held at the Lady Northey Home “ on Wednesday from 2—4 p.m., from the beginning of August.

Total number registered	...	...	6
Re-weighings	...	...	10
Anti-diphtheria inoculations	...	...	14
Vaccinations	...	...	31
T.A.B.	...	...	20

“ At the close of the year a start is being made on the new “ European Day Nursery and Clinic at Parklands, which it is hoped “ will be ready for opening in about September.”

## **DAY NURSERIES**

### **Parklands Day Nursery**

This has been a successful year, although an epidemic of mumps began in January and did not finish entirely until June. On the whole, however, the children have been healthy .

Mrs. Day was appointed Deputy Matron in March and carried out acting duties as Matron from April until November while Mrs. Ross-Whyte was on overseas leave.

The annual Sports Day was held in July, with the usual success.

The Christmas party was held early in December, and was enjoyed by all. In particular, Dr. Gellert gave separate film shows for the children and the parents.

### **Woodley Day Nursery**

The nursery continued to make steady progress throughout the year, and the daily attendance averaged 95.

The children are divided as far as possible for recreation and a little teaching into three groups according to their ages.

There were outbreaks of measles, mumps and chickenpox, but on the whole, the state of health of the children was good.

The annual Sports Day was held successfully in June.

The next social activity was the visit of Father Christmas to the nursery early in December. Many parents arrived in time for tea, and a very happy time was had by all. A play, called "The Lost Rainbow", was given by the older children, and all the children joined in community singing.

The efforts of Mrs. Lovegrove throughout the year were demonstrated in a highly successful and enjoyable dancing display.

### **High Ridge Day Nursery**

The day nursery had a successful year, although some inconvenience was caused through withdrawals of children without sufficient notice being given. The attendance of some children was often somewhat erratic.

The nursery is working to full capacity, and there is inadequate accommodation for accepting more children. The City Council contemplated building an extension in 1957, but this was not carried out. A big improvement was made when tarmac was laid on the drive — this has reduced the nuisance and menace of dust resulting from cars.

In July there was a severe influenza epidemic which affected the staff as well as the children.

Mrs. Snowball took up her duties as Matron on November 4th, and Mrs. Hobden relinquished her duties at the nursery on November 17th. The staff has remained the same during the year, and has worked extremely well.

Sixty children were present at the Christmas party, which was a very successful event.

**Day Nursery Attendances**

		Parklands		Woodley		High Ridge	
		1956	1957	1956	1957	1956	1957
Regular full day	...	21.234	22.528	18.925	18.357	7.819	9.324
Regular mornings	...	9,621	10.650	3,565	5,998	7,060	7.404
Casual full day	...	533	590	640	818	—	98
Casual half day	...	458	219	229	632	14	—



## ASIAN MATERNITY AND CHILD WELFARE

### STAFF

Dr. Philippa Gaffikin continued throughout the year as Medical Officer in Charge, and Dr. Ellen Shirley filled the part-time post of Assistant Medical Officer. Both doctors found their time fully occupied, and by the end of the year it was apparent that the nominally two-thirds time post would need to become three-quarters time to allow for further afternoon sessions.

Mrs. Margaret Arthur continued as Supervisor of Health Visitors and Midwives throughout the year until mid-February, when the new post of Supervisor of Midwives was filled by the transfer of Mrs. V. Hook from another Section. Mrs. Hook entered on her duties with enthusiasm (doubtless tempered by trepidation!) and by the end of the year the value of the appointment was apparent in an improved standard of co-operation and an increased awareness among midwives and of the need to practice consistently good midwifery.

69

The establishment of health visitors was increased by two to a total of twelve. It is pleasant to record that two girls who trained as health visitors (Kenya) in the Section, and who went for further study to the United Kingdom, passed the first part of the S.C.M. examination and are now going forward for training and the examination of the second part.

### BUILDINGS

**Ngara.** For the fourth successive year this building was compelled to carry three times its designed load, since clinic services for the Ngara, Parklands and Pangani areas had to be conducted here.

**Victoria Street.** This excellent building provided, in addition to its usual services, a clinic service for the people of the Nairobi South and West areas for whom no clinic has yet been provided. The distance from those areas is considerable, but a direct 'bus route made the journey feasible and public response was immediate.

**Eastleigh.** Internal re-arrangement of the function of the rooms, and renewal of furnishings, enabled this clinic to give even better service than before. It continued to exert an influence both direct and indirect towards healthier living in an area much in need of improvement.

**Sandiford.** This wood and iron building has stood up well to sixteen years of use. It should give many more years of adequate service in the small district in which it stands.

**Nairobi South.** The disappointment of not having the new clinic built by the East African Railways and Harbours in 1956 was more than dispersed by the rapidity with which it was built in 1957, and by the outstanding helpfulness and co-operation of the architects' department of the Railways. This dream clinic was handed over to His Worship the Mayor by the General Manager on December 7th.

## CLINIC ACTIVITIES

**Ante-natal Welfare.** Ante-natal sessions were held weekly throughout the year at Ngara Clinic for the Ngara, Pangani and Parklands areas, at Victoria Street for that district and for Nairobi South and West, and at Eastleigh and Sandiford for their own localities. The session for Ngara and for Parklands (combined) was continually overcrowded, but it was impossible to institute a separate Parklands session owing to lack of a free period either in Ngara Clinic or in the timetable of a doctor. Victoria Street and Nairobi South shared a session during the early months of the year, but overloading made it unmanageable and that for Nairobi South was fitted into the timetable at another point by reducing the time allocated to family planning. Overall attendances again showed an advance over the preceding year, and came to a total of 6,361.

Maternal health on first attendance was not materially different from previous years, anaemia still being the most constant finding: but one gratifying point was that when a woman, on first attendance was already in the care of her own doctor or of a midwife, her anaemia was in most instances already under treatment.

There were six maternal deaths during the year, as under:—

1. A primipara, death attributable to post-partum haemorrhage and acute shock.
2. A primipara, a regular attender at the ante-natal clinic, died from pulmonary embolism after a normal delivery.
3. A multipara died from cardiac failure secondary to anaemia, after a long labour complicated by uterine inertia and prolapse of the umbilical cord. She had attended an ante-natal clinic, but had paid no attention to advice regarding treatment for anaemia.
4. A primipara, who attended once only at an ante-natal clinic, was delivered at home by a dai. The patient had a severe postpartum haemorrhage. The dai could not be located, nor could other skilled help be located with sufficient speed, and the patient died.

5. A multipara who had not attended any clinic, committed suicide by self-ignition at 8½ months gestation. She was extensively burned and dying when admitted to a nursing home, where an emergency Caesarian Section was done in the unhappily vain hope of saving the child. She died about an hour after the operation, approximately 2½ hours after sustaining the burns, and the infant lived less than 12 hours.
6. A multipara in her 7th pregnancy, not attending a clinic, was delivered by a midwife. The patient suffered a severe postpartum haemorrhage which resulted in her death 3½ hours after delivery.

Out of these six deaths, there is evidence which leads one to suspect that three were due to bad midwifery practise and perhaps even to sheer neglect. It is extremely difficult, on later inquiry, to establish the true facts beyond dispute. Certain it is that much help would be given to local authorities who are endeavouring to raise the standards of midwifery practice in their areas if a full investigation were made and stern disciplinary action taken by the Nurses and Midwives' Council of Kenya. It is also a further demonstration of the imperative need to provide Nairobi with adequate and properly framed By-laws for Midwives.

**Family Planning.** A weekly session for advice on planned parenthood was held for the sixth successive year in Victoria Street clinic. Under the aegis of the Family Planning Association two other centres were opened, in Ngara and Eastleigh clinics, by volunteers from among the Asian medical practitioners.

As the spread of knowledge regarding planned parenthood is a major objective of this Department, it was decided to devote the time of a health visitor to these sessions notwithstanding the consequent curtailment of home visiting, and from May onwards they became a regular part of the timetable.

**Child Welfare.** Total attendances rose by over 1,300 to 17,991, and new registrations in the 0—1 year group also increased, but those in the 1—6 year group fell slightly — a recurrent tendency arising from the undeniable fact that a hefty, active and often unbiddable toddler is an awful job to take anywhere; if the mother has a new infant or is advanced in pregnancy it is often impossible.

The health of infants during the year was less good on the whole than in 1956, and much of the morbidity can be ascribed to 'flu—directly in itself and indirectly through post-'flu debility lowering resistance to other infections. The neonatal death rate rose both absolutely and relatively. 143 infants died at less than a month old, representing 72% of the total of 196 deaths at under a year, whereas the 1956 figure



of 118 neonatal deaths was 63% of the 180 infant deaths in that year. 114 of the neonatal deaths were attributable to premature birth and/or congenital defect or abnormality, 10 more than in the previous year : but the complicating factor of the effect of 'flu on the mother's health makes it impossible to draw valid deductions regarding antenatal care or standards of midwifery. Among causes of death the greatest single rise was in those due to pneumonia, both in the neonatal period and in the 1—12 months group, the total of 44 deaths from this cause being 41% higher than last year; it may be that a number of these fatal pneumonias arose out of 'flu.

The health of toddlers was also less satisfactory during 1957 than in the previous year, and the deaths in the 1—5 years group showed a sharp and distressing rise of almost threefold, to 46 compared with 16 in the previous year. Pneumonia alone accounted for two thirds of the increase, and the conclusion is inescapable that it was related to Asian 'flu. At the end of the year there was a sharp outbreak of measles which, occurring in a child population already debilitated, was considerably more severe than is usual in Nairobi.

There was a marked fall in clinic attendances during August and September, closely related to mothers having suffered an attack of 'flu in July and being too weary with post-'flu debility to make an effort about taking the children to the clinic. Those who came were constantly observed to look pale and "haggard". The situation improved towards the end of September, and the annual clinic parties held at the end of November were of real value in reviving enthusiasm. They were thoroughly enjoyed by all ages, and the Department thanks most sincerely all who contributed in cash, in kind and in personal effort to make them a success. .

**Immunisations.** Direct protection against smallpox, the typhoid group, diphtheria and whooping cough was made available at inoculation sessions, held weekly at each centre. Public response was fully maintained except for vaccination against smallpox. Here the immunity level was already so high, thanks to the "drive" related to last year's minor outbreak, that the number of unvaccinated children was for all practical purposes the same as the number of children born, and the vaccinations carried out were almost exactly 75% of the total births — i.e. all the children aged 3 months or over in the course of the year.

**Home Visiting.** Home visiting was carried out with vigour, and the total of visits rose by over 15,000 in the year. To this phenomenal rise three factors contributed — an increase in the number of health visitors, the excellent and systematic visiting programme organised and controlled by the Supervisor, and the deliberate departmental policy of keeping in-clinic activities to the minimum essential for



public attendance, so that maximal time should be available for visiting. It should also not pass unrecorded that an exceptional effort was put forth by all staff at the time of the main 'flu outbreak, when clinic attendances fell abruptly, to maintain contact with the public and to lend a helping hand it was most needed and most appreciated.

**Health Education.** A widespread use of visual aids was the keynote of the year's programme, and two themes were "plugged", with a single aim in view. The ultimate objective was a reduction in the neonatal mortality rate, and the attack was launched on the approved military principle of the pincer movement. Models and posters demonstrating the essentials of a balanced diet, the prevention of anaemia in pregnancy by proper feeding, or the value of vitamins, alternated with displays showing the proper care of an infant's feeding utensils, the methods and importance of protecting a newborn child from droplet infection, or the care of the premature baby.

Film shows for general audiences were discontinued at the beginning of the year, as there was a decline in public response. Several interesting films on medical subjects were shown to audiences of midwives and dais.

A further competition for handmade clothing — an outfit for infant or toddler of either sex — was held in response to marked public demand. Many entries were of a very high standard: the winners received their prizes at the hands of the Mayoress, Mrs. Travis, and were deservedly commended for their excellent work.

73

## TRAINING

**Health Visitors.** The year's work for the four student health visitors comprised a full programme of lectures, demonstrations, practical tuition and observation visits, divided into three terms, each concluding with terminal examinations.

In the last week of the first term the students were able to attend the sessions of the Conference on Infant Mortality, a privilege much appreciated. The papers read to the Conference, being intended for a qualified professional audience, must in part at least have been beyond their comprehension; nevertheless they listened with interest and received real benefit from what they heard, and a brisk stimulus to thought, judging by subsequent questions addressed to the lecturer in child welfare!

Practical instruction in the conduct of clinic sessions and of immunisation sessions, and in the proper maintenance of records and registers, was given by the Supervisor who also accompanied the

students individually and by groups in a programme of instructional home visiting. This was arranged, with the generous co-operation of the housewives concerned, to demonstrate the approach to common problems encountered in the home.

With the kindly consent of the Matron, Mrs. Hobden, it was arranged that each student should spend an entire week at High Ridge Day Nursery, where she could enter fully into the daily needs, activities and care of small children and watch in operation the valuable service which a day nursery provides.

Observation visits during the year, additional to the week at High Ridge Day Nursery were paid to a European Day Nursery, the Kenya Co-operative Creameries, various restaurants and places where food is prepared, Mary's Hall and the Mathari Mental Hospital.

During November the students were admitted to lectures arranged for the Midwives' Refresher Course, and they were also allowed to attend a number of lectures and demonstrations arranged for midwives during the year.

**Midwives.** The appointment of an Assistant Supervisor (Midwives) made possible a much wider programme of midwives' meetings, with lectures, demonstrations or "Open Forum" sessions. The annual Refresher Course was held in November, and was attended by 20 of the 22 practising midwives. The programme of lectures, films and visits to places of interest was based on suggestions from the midwives themselves: the many thoughtful suggestions put forward, and the close attention with which the items were received bore witness to the interest taken by the midwives in the wider aspects of their profession and to their real appreciation of the opportunities offered them. The sincere thanks of all concerned are tendered to the public-spirited people who so generously expended time and trouble in preparing and delivering the lectures and demonstrations. The Course was opened by the Deputy Mayor, Alderman Mohan Singh, in a wittily appropriate speech, and closed with the presentation of certificates of attendance by the Mayoress, Mrs. Travis, at a ceremony at Ngara clinic.

## **CO-OPERATION WITH OTHER HEALTH SERVICES**

**Private Practitioners.** A happy instance of co-operation between doctors in private practice and in the Public Health service took place at the end of March, when a Conference on Maternal and Infant Mortality was held in the Council Chamber of the City Hall. Papers on a variety of related subjects were read to a keenly interested professional audience, and much of real value emerged from them and from the resultant discussions. The Medical Officer prepared and

read a paper on Infant Feeding in Nairobi, embodying her conclusions on methods most likely to be successful under local conditions — conclusions put forward with diffidence but with the sincere aim of collating and bringing to notice the results 10 years experience in that limited but important field. Happily the paper was received in the same spirit as it had been intended, and indeed elicited a most generous response. The long-term influence of the Conference as a whole cannot yet be assessed, but the impact of fresh minds and fresh ideas was truly stimulating.

**Indian Maternity Hospital.** In the early part of the year the Management Committee were distressed to learn from the Matron, Miss Sherlaw, of a deterioration in her health necessitating treatment in England. Happily the treatment proved successful, and she returned to Kenya some months later; but meanwhile she had decided to retire, and so ended 20 years of devoted service to the hospital. Following on her decision, the Assistant Matron also felt that a move was desirable and resigned; the hospital underwent a complete change of senior staff within a month.

The appointment of a new matron was a matter of urgency, and through the generous help of the Director of Medical Services and his staff, the services of a nursing sister were made available as a temporary measure. The sister concerned, Miss Nicolson, proved so ideally suited to the position that the Committee suggested a permanent appointment, and after some delay this was achieved. Her influence was quickly evident in numerous improvements to every sphere of hospital management and service, not least in the discipline and training of probationers.

The foundation stone of the new Nurses' Home was laid early in October, and a subcommittee was set up, on which the Medical Officer was asked to serve, to consider and decide on furniture, furnishings and all equipment medical and otherwise which would be required for the new building and for the old building as converted.

**Private Nursing and Maternity Homes.** The same five private homes were in operation as during the previous year, four conducted by midwives and one by a doctor. In addition to the routine quarterly inspections by the Deputy Medical Officer of Health, the Medical Officer in Charge, the Supervisor and Assistant Supervisor jointly, the last-named made frequent visits at irregular intervals to see them in their daily activities and advise on improved methods and standards. She reported that all four midwives made some effort to co-operate and to rectify material defects when they were pointed out, but that all the maternity homes were inadequately staffed, especially for night duty, and all except the smallest undertook cases much beyond their capacity in the matter of nursing care.



**Midwives.** The appointment of Mrs. Hook eased enormously the former difficulties of keeping in constant touch with the midwives. Projects long considered but dismissed as impracticable became at once possible, notably the direct supervision of each midwife's methods. The lack of district training before qualification has been a constant handicap to Kenya-trained midwives, for the conditions of domiciliary midwifery are vastly different from practice in hospital. Mrs. Hook supervised the conduct of a case with each midwife individually, and by practical demonstration helped her to bring her methods, equipment and "layout" that much nearer to fully modern standards.

Notification of live births was very good throughout the year, but there was still confusion regarding the notification of stillbirths. It should be emphasised that stillbirths are notifiable if the pregnancy had lasted 28 weeks or more, and ALL live births are notifiable irrespective of the length of gestation and even though the infant's period of survival may have been very brief.

Record keeping continued to give cause for concern. Continued supervision and constantly repeated instructions were needed to produce even moderate recording of the essential facts. A new type of register, to be introduced as soon as available, is intended to provide a format for more detailed recording with minimal effort.

76

At the end of February the ranks of Nairobi midwives suffered the loss of a senior and valued member, Mrs. Jenabai Samji, who had worked as a midwife in the city for over 20 years. Her immense practice testified alike to the confidence reposed in her abilities and to the warm regard in which she was held. This department joined with her many friends in mourning her passing.

**Dais.** As with the midwives, the task of maintaining close supervisory contact with the dais was immensely eased by the appointment of a full-time Assistant Supervisor. Much time was devoted to these unqualified midwives who, despite their limited training, still have the prestige of tradition behind them and are called to attend on 20% of Asian births in Nairobi. Apart from the established practice of devoting an afternoon per week to receiving their notifications and discussing their problems, it was possible to achieve at last the long-sought aim of supervising their actual work, both delivery of cases and the subsequent care of mother and child.

## CONCLUSIONS

Three sensitive indicators of a community's health are the maternal mortality rate, the infant mortality rate and (a sub-section of the latter) the neonatal mortality rate, and a rise in all three underlines what has already been shown, that 1957 was a bad health year.



There were 6 maternal deaths in relation to 4,061 live and still births, giving a maternal mortality rate of 1.47 per thousand births, which is greater than in 1956 by 0.46 per thousand. The infant deaths occurring before the first birthday were 196 out of 3,955 live births, giving an infant mortality rate of 49.5 per thousand, which is greater by 2.4 per thousand than last year; and of the 196 infant deaths, those occurring at under one month were 143, equivalent to a neonatal mortality rate of 35.2 per thousand, compared to 29.5 per thousand in 1956. These figures emphasise what was already known, that Nairobi has reached a stage in the struggle for maternal and child health where progress is slow, gains are hardly won and precariously held, and any adverse factor can swing the balance from victory to defeat. It is reasonable to assume that the influenza epidemic was in part responsible for the deterioration, but the fact remains that despite all efforts by this section — and the statistical records show the magnitude of that effort — the situation worsened. It is a salutary reminder that good health for Nairobi's future citizens can be achieved only by the concerted efforts of every individual citizen.

### STATISTICAL RECORD

#### Antenatal Welfare

	Sandiford Nairobi						
	Ngara	Eastleigh	Victoria St.	Pangani	Road	South	Total
Sessions ... ..	49	99	50	46	49	39	332
Attendances ...	1,767	1,750	1,304	984	380	175	6,361
New registrations ...	489	477	403	291	69	53	1,782

77

#### Child Welfare

Sessions ... ..	52	102	100	46	48	44	392
Attendances ...	5,369	3,760	764	2,499	899	700	17,091
New registrations							
0-1 year ... ..	622	550	573	407	72	102	2,326
1-5 years ... ..	272	294	358	180	96	82	1,282

#### Family Planning

Attendances ...	58	24	114	————No sessions————			196
-----------------	----	----	-----	---------------------	--	--	-----

#### Immunisation Clinics

	Sandiford Road/ Nairobi South					
Vaccination ...	770	991	755	600	188	3,304
Diphtheria ... ..	21	19	—	39	10	89
Diphtheria/Pertussis	1,028	778	186	611	420	3,023
T.A.B. ... ..	78	671	47	78	60	934

#### Health Education

Attendances (at classes, etc.) ...	40	144	93	77	23
---------------------------------------	----	-----	----	----	----

#### Home Visits

Supervisor ... ..	—	—	—	—	—	158
Asst. Supervisor/ Midwives ... ..	—	—	—	—	—	478
Health Visitors ...	13,398	9,486	13,385	10,543	8,104	55,552

## Comparative Figures 5 year period

### Antenatal Welfare

			1953	1954	1955	1956	1957
Attendances	...	...	5.034	5.453	5.712	6.286	6,361
New registrations	...	...	1.481	1.518	1.607	1.889	1.782

### Child Welfare

Attendances	...	...	14.403	12.686	14.738	16.639	17.991
New registrations							
0 — 1 year	...	...	1.499	1.417	1.741	2.266	2.326
1 — 5 years	...	...	1.467	1.152	900	1.474	1,282

### Home Visits

All staff	...	...	...	12.966	17.107	21.081	39.258	55.552
-----------	-----	-----	-----	--------	--------	--------	--------	--------

### Total Attendances

All ages, all clinics	...	...	25.448	22.703	26.072	32.433	32.438
-----------------------	-----	-----	--------	--------	--------	--------	--------

### Notification of Births

						Live Births	Stillbirths
Midwives	...	...	...	...	...	1,916	26
Dais	...	...	...	...	...	789	11
Indian Maternity Hospital	...	...	...	...	...	571	21
Ideal Maternity Home	...	...	...	...	...	216	6
Sunshine Maternity Home	...	...	...	...	...	105	2
Janet Miranda's Maternity Home	..	...	...	...	...	195	6
Mrs. Bedier's Maternity Home	...	...	...	...	...	59	—
Nairobi Nursing Home	...	...	...	...	...	77	5
Alice Beaton Nursing Home	...	...	...	...	...	23	—
Doctors	...	...	...	...	...	4	—
Stillbirths not notified	...	...	...	...	...	—	29
TOTAL						3,955	106

**Mortality Rates**

Maternal deaths	...	...	...	...	...	5
Maternal mortality rate (per thousand births)	...					1.23
Infant deaths (under 1 year old)	...	...	...			182
Infant mortality rate (per thousand live births)	...					46.02

**Causes of Stillbirths**

Ante-partum haemorrhage	...	...	...	..		3
Asphyxia neonatorum	...	...	...	..		3
Breech delivery; delay of head	...	...	...			1
Congenital abnormality	...	...	...	...		7
Diabetes of mother	...	...	..	...		1
Hydramnios, cause unknown	...	...	...			2
Obstructed labour	...	...	...	...	...	6
Placenta praevia	...	...	...	...	...	5
Premature separation of placenta	...	..	...			1
Prematurity	...	...	...	...	...	26
Prolonged labour	...	...	...	...	...	2
Syphilis in mother and prolapsed cord	...	...				1
Toxaemia of pregnancy	...	...	...	..		11
Uterin asphyxia and prolapsed cord	...	...				6
Unknown causes	...	...	...	...	..	31
						<hr/>
						106
						<hr/>

**Causes of Death —  
Asian Children under 5 years**

	0—1 month	1 month—1 yr.	Total under 1 yr.	1—5 yrs.
Acute hepatitis ... ..				2
Accident (swallowing fireworks) ...				1
Acute oedema of larynx ... ..	3	1	4	
Anaemia ... ..	1		1	
Anaemia and malnutrition ... ..		3	3	3
Acute pyogenic meningitis ... ..				1
Acute leukaemia ... ..				1
Acute nephritis ... ..		1	1	
Asphyxia neonatorum ... ..	4		4	
Bronchial asthma ... ..				2
Burning ... ..				1
Cerebral haemorrhage ... ..	4		4	
Congenital abnormality ... ..	7		7	
Congenital biliary obstruction ... ..	1		1	
Congenital heart disease ... ..	1	2	3	
Delayed labour ... ..	2		2	
Encephalitis ... ..		1	1	1
Epilepsy ... ..				1
Endocarditis and rheumatic fever ... ..				1
Gastro-enteritis ... ..	2	15	17	2
Haemolytic anaemia (mother Rh. neg.) ... ..	1		1	
Haemorrhagic disease of newborn ... ..	1		1	
Intussusception and post-op. shock ... ..		1	1	
Icterus neonatorum ... ..	2		2	
Intracranial injury ... ..	4		4	
Impetigo and bronchitis ... ..				1
Marasmus ... ..				2
Malaria ... ..				2
Total carried forward ... ..	33	24	57	21
Pemphigus ... ..	2		2	
Poliomyelitis ... ..				1
Pneumonia ... ..	16	28	44	18
Pneumonia and measles ... ..				4
Pneumonia; post-operative ... ..	1		1	
Precipitate labour ... ..	1		1	
Prematurity; cause unknown ... ..	78		78	
Prematurity due to toxæmia ... ..	2		2	
Prematurity — placenta prævia ... ..	5		5	
Prematurity and shock — Caesarian section after maternal suicide attempt by burning ... ..	1		1	
Tetanus and toxæmia ... ..				1
Tuberculous meningitis ... ..		1	1	1
Unknown cause ... ..	4		4	
<b>TOTALS</b>	<b>143</b>	<b>53</b>	<b>196</b>	<b>46</b>







*AFRICAN MATERNITY AND CHILD WELFARE*

**AFRICAN MATERNITY  
AND CHILD WELFARE****STAFF****Medical Officers**

Three Medical Officers worked full-time in the Section throughout the year. Dr. Henry, who was Medical Officer in Charge since 1947, unhappily for the Department, went on retirement leave in November. Dr. Henry was an exceptional person and was a source of strength not only to those who worked most closely with her, but to many members of the staff who were not associated with the Department. She was untiring in the work she did for others, and she will be greatly missed.

Dr. Haskard was appointed Medical Officer in Charge of this Section on the 1st December, 1957.

**Supervisor of Health Visitors**

On the resignation of Mrs. Mitchell in February, 1957, Mrs. Jackson was appointed as Supervisor.

**Other Staff**

The staff of European Health Visitors changed almost completely throughout the year. Frequent changes such as these make the running of clinics extremely difficult. On the other hand, full co-operation was received from the European staff, and they carried out their work extremely well.

The African staff was also unstable, and many changes took place. It is still difficult to obtain suitable African girls for senior posts, as applicants who have their full Grade II nursing qualification as well as their Assistant Midwives' certificates are not prepared to join the Department at the present rate of salary offered. This applies to a certain extent to junior staff who have the nursing qualifications only. It is hoped that a revision of scales may take place in the near future so that well qualified people will be attracted to join the Department.

Mr. Davis-Jones of the Government Medical Research Laboratory very kindly gave special training to a member of our junior staff to enable her to do blood counts in the clinics. She was trained in haemoglobin and total red blood cell estimations, and is proving quite efficient at this work. We are grateful to the Medical Research Laboratory for this help, and also for loaning a microscope to the Section so that blood counts could be done in the clinics.



## REVIEW OF ACTIVITIES

### Clinics

Pumwani clinic was reopened on March 4th and attendances have been extremely satisfactory since then, particularly in ante-natal work. Two interesting pilot schemes were started in Asian residential areas — one in the Parklands area, the other in Park Road area. The Committee and members of the Maharashtra Club were extremely co-operative and allowed us, for a small rent, the use of their club premises for the clinic in the Parklands area. Our grateful thanks are extended to them for this. This clinic has progressed very satisfactorily, and it is probable that the number of sessions will have to be increased next year.

The clinic in Park Road was held in a tent erected by the members of the Ahmadiyya community within the grounds of their mosque. This clinic has not been satisfactory, and it is probable that it will be advisable to end it next year.

It is still felt that clinic sessions in reasonable premises in other areas of the City would cater for a great need of the African communities living in residential areas, and that careful thought should be given to extending this field of work.

82

Liverpool Road clinic was opened by Lady Kirby on the 24th June. This clinic was built by the Railway authorities, who continue to show a great interest in work of the Section and who are always most helpful in every way.

Mbotela clinic was opened in October 24th. Sessions had been held in Mbotela Estate in two tiny rooms during the previous year, and the new building was a welcome change.

### General

Considerable concern is felt about two social problems which appear to be on the increase. One is the number of young children aged between five and fourteen (particularly boys) who band together into gangs and spend their days roaming round the African residential areas. There appears to be no parental or other control over these children, and while at the moment the mischief which they create does not appear to be very serious, it is quite probable that it will develop into mischief of a grave nature.

The other is the question of the working mother. This problem is increasing. Many children are left by these mothers in the charge of "ayahs", who are very often not much older than the infants they are looking after. The staff, in their rounds to houses, endeavour to contact these young "ayahs" with their charges and to persuade them to attend the clinics.



It is felt that this is one direction in which our energies can be directed more satisfactorily when the present "dispensary service" has been taken over by the new health centres.

### **Attendances**

The total number of attendances at all clinics throughout the year was 232,343, and the total number of examinations done by Medical Officers was 30,280. These included 1,209 nursery school children as well as examinations of nursery school and clinic staff.

### **Ante-natal Clinics**

The total number of attendances increased by 3,306 over 1956, and the number of new cases increased by 1,111. The number of post-natal examinations done was 680, i.e. 168 more than 1956. While this number is increasing, it remains difficult to persuade mothers of the desirability of having post-natal examinations. A concentrated effort is made by midwives working in the districts to explain to mothers the reason why a post-natal examination is necessary, and every endeavour is made to encourage them to attend.

### **Child Welfare Clinics**

The number of new infant welfare cases increased by 796 over 1956, and the number of pre-school new cases increased by 410.

Milk bar sessions were held at all the clinics. The following groups of children are given milk at these bars :—

- (a) infants at weaning age, in order to teach them to drink milk;
- (b) convalescent children following illnesses;
- (c) children suffering from malnutrition; and
- (d) children, generally discharged from hospital, following treatment for tuberculosis.

Powdered fat-free milk is used in most cases, and once the mothers see that the children like this milk, they are invariably willing to buy it and give it to the children in their homes. Demonstrations are given in the clinics to mothers on various ways of using fat-free milk, particularly by mixing it with other food.

### **Dispensary Services**

The number of attendances increased by 17,607 over 1956. This is a service which should be handed over to the health centres when they are opened, but it is recommended that some special sessions should be held for mothers and infants referred by the clinics. This is a matter which will have to be given considerable thought when the health centres open.

### **Home Visits**

The total number of visits paid during the year increased by 1,110 over 1956. The staff generally find that the atmosphere in the residential areas is a pleasant one, and that they are invariably welcomed into the homes.

## **Sanitation and Housing**

While improvements continue to be made in the many residential areas, there are still districts where the sanitation and housing is very unsatisfactory. During wet weather in particular, many estates, such as Ofafa, become virtually a sea of mud, and when people are living in circumstances such as these it is very difficult to expect a very high standard of cleanliness in the homes. The inhabitants of these estates do what they can by laying stepping stones and making other arrangements to make conditions a little more satisfactory.

In Ofafa, too, the general drainage of the estate is unsatisfactory. There are no drains for household waste and consequently this is poured and scattered all round, leading to a filthy condition which encourages the breeding of flies. It is unfortunate that this criticism must be levelled at one of the Council's estates.

Mbotela, on the other hand, is on the whole very pleasant and very satisfactory.

Comment must be made about housing built by private firms for their employees. While some of these are very satisfactory, and while it is obvious that some firms take a great interest in their employees, it is distressing to have to report that such instances are very exceptional. Most firms, having built the houses and laid out their estates (often in a very unsatisfactory way), allow them to get into a very neglected condition and appear to take little or no interest whatsoever in the inhabitants.

## **Lectures**

Throughout the year lectures were given by the Medical Officers and by the Supervisor of Health Visitors to all members of the staff on various aspects of their work. In particular, attention was paid in these lectures to general nursing and health visiting, and examinations were set for nursing lectures and prizes given for the first three in each group.

A visit was also paid by members of the staff to the Public Health Department laboratory, and they were shown how specimens were prepared for examination and then examined.

## **Teaching**

In all clinics group teaching was given to mothers. These teaching sessions were, of course, followed by individual tuition which was given in the homes. Subjects covered were personal, community and household hygiene, antenatal care, preparation for delivery and home nursing, and care of infants. Lectures were also given on diets for children of all ages, and diet sheets which were distributed to mothers were introduced into all clinics. These were written in Ki-swahili and various vernacular languages.

**Medical Aspects**

Throughout the year an even closer association was maintained with the staff of the Tuberculosis Clinic at the Infectious Diseases Hospital. Many cases were referred by the Tuberculosis Clinic for nutritional treatment. Great help was given by the T.B. personnel in investigating cases referred to them by our clinics.

Because of an increase in acute cases of poliomyelitis, at the beginning of the year, T.A.B. inoculations were stopped from February until June. Sixteen cases of poliomyelitis occurred in clinic children during this period. After June the number of cases decreased, but sporadic cases occurred throughout the year. As notifications were received, homes were visited and advice was given.

In July and August the residential areas were hit by so-called "Asian" 'flu. Both staff and clinic attenders suffered considerably.

Treatment was given to 1,436 cases of proved malaria, and to 740 cases of clinical malaria. 966 cases of helminthic infections were treated. Kaloleni clinic remains the centre for the treatment of otorrhoea, and an average of 32 cases per month were treated.

2,664 smallpox vaccinations were done, and 2,888 T.A.B. inoculations were given.

**Nursery Schools**

Because of sickness, City Council schools were virtually without a Supervisor for most of the year. Medical examinations were done regularly by the Medical Officers. A great gap, however, in the medical attention given to these children lies in our inability to follow up children who require continued observation or attention, and the staff of the nurseries showed little interest in pursuing this side of the work.

Medical examinations were also done at the Railway schools, and the follow-up in children attending these is much more satisfactory.

**Laboratory Tests**

Kahn specimens	...	...	...	3,384	...	positive	205
Cervical smears for G.C.	...	...	...	3,241	...	positive	423
Blood slides for malaria	...	...	...	12,555	...	positive	1,722
Stools for helminths	...	...	...	6,549	...	positive	2,053
Total red blood counts and haemoglobin estimations = 484.							

**District Midwives**

Mrs. Davis continued her excellent work as Supervisor throughout the year. Monthly meetings of all midwives practising domiciliary midwifery were held and discussions took place on all aspects of their work and any problems which they cared to bring up.

Each midwife was provided with a visiting book, and each ante-natal and post-natal visit was recorded.



1957		Kariokor	Muthuruwa	Kaloleni	Makongeni	Maesha	Liverpool Road	Bahati V.	Bahati P.W.D.	P. & T.	Mbotela	Ofafa	Pumwani	Parklands	Forest Road	TOTALS							
																1950	1951	1952	1953	1954	1955	1956	1957
<b>Ante natal</b>																							
New Cases	..	432	357	276	278	169	155	449	154	320	252	205	591	123	21	1,735	2,098	2,194	1,639	1,845	2,540	2,591	3,702
Births at home	..	181	143	129	117	91	79	222	99	142	113	49	111	3	4	382	491	803	532	432	717	878	1,483
Births in hospital	..	86	53	84	53	29	25	111	42	53	22	18	119	23	6	226	231	363	324	334	570	655	727
Total attendances	..	1,609	1,033	992	931	579	493	1,352	552	943	696	261	1,343	305	55	5,634	5,446	5,492	4,447	4,936	7,341	7,838	11,144
<b>Infant Welfare</b>																							
0-1 year New cases	..	358	293	358	278	180	181	386	170	265	267	94	445	61	19	1,576	1,888	1,696	1,543	1,716	2,521	2,572	3,368
0-1 year Transfers to P.S. Register	..	114	104	109	95	68	45	61	52	54	32	28	29	—	—	343	363	429	262	249	365	559	791
1-5 years New cases	..	238	236	327	279	198	240	292	123	221	277	147	433	82	22	1,831	2,283	1,753	1,259	2,318	2,408	2,765	3,175
Total attendances	..	4,578	3,703	4,331	3,344	3,173	2,243	4,085	2,275	3,001	2,695	2,093	3,439	333	124	33,798	37,673	25,908	13,626	19,722	28,983	32,622	39,517
<b>Home Visits</b>																							
By Health Visitors	..	720	671	374	320	142	356	238	194	1,273	541	658	398	—	—	5,012	4,751	3,609	576	769	3,992	6,479	5,885
By African Assistants	..	2,001	2,637	3,011	1,951	1,390	1,832	1,932	776	1,432	1,420	1,712	2,068	21	—	15,399	22,343	16,660	3,880	1,869	13,094	20,479	22,183
Total	..	2,721	3,308	3,385	2,271	1,532	2,188	2,170	970	2,705	1,961	2,370	2,466	21	—	20,411	27,094	20,269	4,456	2,638	17,086	26,958	28,068
<b>Dispensary</b>																							
Women — new	..	502	392	319	345	245	149	483	260	284	246	106	497	137	24	6,499	2,293	2,276	1,840	2,263	2,385	2,471	3,989
Women — repeat	..	888	987	571	888	751	355	1,018	614	463	337	209	1,115	163	51	—	13,938	14,132	5,378	6,531	4,539	4,912	8,410
Children — new	..	1,383	1,688	1,513	1,457	1,261	961	1,643	958	979	933	779	1,188	122	50	36,763	8,341	8,457	6,592	8,776	11,630	13,001	14,915
Children — repeat	..	3,959	6,167	5,753	7,505	6,891	6,583	4,885	4,369	3,805	3,816	2,724	4,684	182	105	—	53,702	52,829	32,226	58,555	54,317	52,583	61,428
Attendances for tonics	..	1,095	253	986	1,062	1,275	749	1,403	1,251	262	756	945	1,010	148	102	—	—	2,716	5,270	8,506	8,417	9,465	11,297
Total attendances	..	7,827	9,487	9,142	11,257	10,423	8,797	9,432	7,452	5,793	6,088	4,763	8,494	752	332	43,262	78,274	80,410	51,306	84,631	81,288	82,432	100,039



## Pumwani

Miss Rose Njeri from 3rd August, 1957.

Districts:—

Pumwani	...	...	...	21
Bondeni	...	...	...	18
Gorofani	...	...	...	8
Kariokor	...	...	...	3
Starehe	...	...	...	4

To African Maternity Hospital

3 mothers with delay in 2nd stage.

1 mother with child's arm over head.

## Liverpool Road

Miss Mary Salome from 17th October.

Districts:—

Gorofani	...	...	...	15
Maesha	...	...	...	1

## Makongeni

Miss Elizabeth Njeri all the year.

Districts:—

Makongeni	...	...	...	66
Maesha	...	...	...	36
Liverpool Road until 17th October	..	...	...	40

87

To African Maternity Hospital

1 mother with twins under 5 lbs.

3 mothers with delayed 2nd stage.

1 mother for L.S.C.S. operation.

1 mother para. O child over 8 lbs.

1 mother with prolapsed cord.

1 mother with albuminuria — twins.

1 mother with breach presentation.

1 mother with premature baby—lived two days.

1 mother with P.P.H.

Abnormal and dead

Premature baby lived 5 hours.

Midwife called after delivery.

Premature baby stillbirth — midwife called after  
delivery.

Deliveries:—

Midwife	...	...	...	142
By self	...	...	...	64
African Maternity Hospital				98

## Muthuruwa

Miss Rose Njeri until 3rd August.

Miss Mary Lajaro 3.8.57 to 15.9.57.

Miss Rachel Wambui 16.9.57 to end of year.

To African Maternity Hospital

1 mother with shoulder presentation.

5 mothers with delay in 2nd stage.

1 mother with prolapsed cord.

1 mother with salpingitis on the 3rd day.

1 mother with temperature of 103° (found to be malaria).

Normal and dead deliveries :

1 stillbirth (no cause found).

Midwife ... .. 110

By self ... .. 12

African Maternity Hospital 48

## Kaloleni

Mrs. Delina Heron all the year.

To African Maternity Hospital

2 mothers — children with jaundice on 3rd day.

1 mother — child delivered with band on head.

1 mother — twins under 5 lbs.

3 mothers — delay in 2nd stage.

1 mother — delay in 1st stage.

1 mother — face presentation.

1 mother — repair of perineum.

Abnormal and dead

Stillborn — macerated foetus.

Midwife called when head on perineum.

Deliveries

Midwife ... .. 83

By self ... .. 20

African Maternity Hospital 78

## Bahati

Miss Naomi Phineas all the year.

Districts:—

P.W.D. ... .. 46

Bahati ... .. 179

## To African Maternity Hospital

- 15 mothers with delay in 2nd stage.
- 1 mother with temperature of 105° on 5th day.
- 1 mother with a P.P.H.
- 1 mother for a forceps delivery.
- 4 mothers with delay in 1st stage.
- 1 mother — umbilical cord three times around child's neck.
- 2 B.B.A.'s. — midwife unable to expel the placenta.
- 1 mother with twin breeches.

## Normal and Dead

- Mother delivered herself — stillborn.
- Midwife called to deliver the placenta.
- Mother from reserve — stillborn.
- Midwife called to deliver the placenta.
- Stillborn — very large child — difficulty in delivering shoulders.

## Deliveries

Midwife	...	...	...	225
By self	...	...	...	18
African Maternity Hospital				79

89

## Posts and Telegraph

- Miss Mary Naftali until 18th February.
- Mrs. Mary Agnes Waryaki from 1st April.
- Miss Drucilla Agot helped between 18.2.57 and 1.4.57.

## Districts:—

P. & T.	...	...	...	24
D.C. Housing	...	...	...	15
Company Housing	...	...	...	16
High Commission	...	...	...	18

## To African Maternity Hospital

- 2 mothers with delay in 2nd stage.
- 1 mother with P.P.H.
- 1 mother with prolapse cord.
- 1 mother with premature baby under 5 lbs.

## Deliveries

Midwife	...	...	...	73
By self	...	...	...	42
African Maternity Hospital				37

Mbotela

Miss Drucilla Agot all the year.

Districts:—

Ofafa	...	...	...	15
Mbotela	...	...	...	78
P. & T.	...	...	...	16

To African Maternity Hospital

- 1 mother, child delivered with hand on head.
- 1 mother for forceps delivery.
- 1 mother with delay in 2nd stage.
- 1 mother from reserve — premature baby.
- 1 mother — brow presentation.
- 1 mother — delay in 1st stage.

Deliveries

Midwife	...	...	...	109
By self	...	...	...	22
African Maternity Hospital				29

Kariokor

Private midwife — Mrs. Ruth Elekani all the year.

District:—

Kariokor ... .. 143  
Eastleigh — Asian births are notified to the Asian clinic.

90

District	Normal living child	Normal dead child	Abnormal living child	Abnormal dead child	To A.M.H.	Total	P.N.E.	B.B.A.	Infant deaths	Maternal deaths
Pumwani	50	—	—	—	4	54	9	1	—	—
Muthuruwa	100	1	—	—	9	110	51	14	1	—
Kaloleni	72	—	—	1	10	83	21	3	1	—
Makongeni	129	1	—	1	11	142	52	3	2	—
Liverpool Road	16	—	—	—	—	16	—	—	—	—
Bahati	195	1	—	3	26	225	32	13	4	—
Posts and Telegraphs	67	1	—	—	5	73	9	1	—	—
Mbotela	99	—	1	1	8	109	29	5	2	—
TOTAL	728	4	1	6	73	812	203	40	10	—

Number of Visits by Supervisor

Total Visits	Not Seen	Gone to Reserve	Wrong Address	Overcrowded	Hospital Visits
1,173	150	32	58	184	350



**AFRICAN MATERNITY HOSPITAL****Staff**

There have been fewer changes during the year than usual. The Medical Superintendent, Dr. P. M. Anderson, the Sister Tutor, Miss Wenzel, Sister Joyce and Sister O'Toole have all completed another year of service.

The Matron, Miss Koppert, proceeded on overseas leave for two months in the middle of the year, and during her absence Sister Wenzel was appointed Acting Matron.

Two temporary members of the staff, Sister Welford and Sister Durie left in April and in June respectively.

Sister Greening rejoined the hospital in April after working for a year in England. Sister Briggs joined the staff in August, and left in December. Sister Tett worked in the Ante-natal Clinic for half days during the two months that Matron was on leave.

The post of Social Welfare Worker has been discontinued.

Throughout the year there has been a full quota of Staff Nurses. The plan to give them greater scope and responsibilities, which was started in 1956, has been extended still further, with, on the whole, satisfactory results.

**91****Training**

The fuller syllabus of training instigated last year is being put into effect. Particular stress has been laid this year on the recruitment of suitable trainees. The staff of the Education Department has been very helpful in this matter. Applicants are now only accepted if they have satisfactory recommendations from their school Principals regarding their general education and their character. They must have passed the Kenya African Preliminary Examination or have had previous nursing experience. All recruits are put on probation for their first six months. At the end of this period it is decided whether or not they are fit to continue training. Even if they are accepted, they may be required to stay in the Training School for longer periods than the usual two years before they are considered fit to take the final examination.

In spite of these stringent methods of selection, it is still difficult to find many girls who have both the ability and the moral fibre to qualify as good, reliable midwives. Our policy is to produce trained women able to stand as bastions in their community, even if their numbers are few.

Several refresher courses have been held for Staff Nurses during the year, and these are much appreciated.

A considerable quantity of necessary teaching equipment has been purchased during the year, but the teaching accommodation is still grossly inadequate. It is hoped that a new classroom building will be provided in 1958.

In April, 50% of entries gained their Midwives Certificates, and in October 70% succeeded. It should be remembered that these candidates started the course before the new regulations applying to recruitment and training came into force.

### **General Work**

The total number of admissions remains constant, but the number of births has risen slightly compared with the figure for last year. The figures for maternal deaths, stillbirths and neonatal deaths are practically unaltered. The abnormal cases were 15.08% of the total, which again is a remarkably constant figure. Twin deliveries were 17.03% of births in 1956 and 18.19% in 1957.

The overall number of cases requiring operation has again increased, and 76 Caesarean Sections were performed in 1957.

The maternal death rate was 2.4 per thousand admissions.

92

The attendances at the Ante-natal Clinic have fallen by 892 as compared with last year. This is due to the fact that in May and June it was decided to attempt to limit the cases attending this clinic to Nairobi residents, and residents of a few outlying districts which are not served by any other hospital. This plan has only had very disappointing results. The admission figures have hardly dropped at all as a result, and the figure for cases who never attended any ante-natal clinic, yet gave birth at the hospital, has risen by 153. Expressed as a percentage, in 1956 10.81% of births were direct cases, and in 1957 15.09%. Had this new scheme been in force for the whole year there would, of course, have been a much greater difference. It is frequently noticed now that women living in outlying districts only present themselves at hospital when they are so advanced in labour that they cannot possibly be turned away and told to go elsewhere.

### **Other Items**

We would again like to express our thanks to the staff of the Maternity and Child Welfare Department, the Venereal Diseases Clinic, the Parks and Gardens Department and the Maintenance Department.

There is an even closer liaison between this hospital and the Maternity and Child Welfare Service, and the willing help that has been given us in so many instances is greatly appreciated.

The Venereal Diseases Clinic has given us a great deal of assistance in the past year, and it is very much hoped that when the Clinic leaves its present premises in the hospital in 1958, this invaluable support will not diminish.

The Parks and Gardens staff have again been most helpful and, in particular, have planted shady trees on the lawns to add to the comfort of ambulant patients.

Towards the close of the year the Maintenance Department started work on a number of alterations to the hospital buildings. These include the provision of a new sluice, the tiling of the walls of all three labour wards, and the provision of much-needed, improved quarters for the Staff Nurses.

Many items of hospital equipment have been received during the year. These include an assortment of theatre instruments, new mattresses for all the beds, and an oxygen tent for premature babies.

Many prominent medical and lay visitors were received at the hospital during the year, including Lady Altrincham (formerly Lady Grigg) whose name the hospital bears.

**Hospital Statistics**

Total Admissions	...	...	...	...	...	3,371
Births	...	...	...	...	...	2,949
Stillbirths	...	...	...	...	...	163
Maternal Deaths	...	...	...	...	...	8
Infant Deaths	...	...	...	...	...	164
Operations	...	...	...	...	...	231
Born Before Arrival	...	...	...	...	...	155
Abnormal Presentations	...	...	...	...	...	89
Twins	...	...	...	...	...	52
Triplets	...	...	...	...	...	—

**Ante Natal Clinics**

Number of clinics held	...	...	...	...	203
Attendances	...	...	...	...	13,947

**Post Natal Clinics**

Number of clinics held	...	...	...	...	48
Attendances	...	...	...	...	779
Patients in Hospital on first day of year	...	...	...	...	67

**Admissions**

Residents	...	...	...	...	...	2,442
Non-resident	...	...	...	...	...	929
Total	...	...	...	...	...	3,371
Discharges	...	...	...	...	...	3,367
Patients in hospital on last day of year	...	...	...	...	...	36
Patients Days	...	...	...	...	...	19,154
Baby Days	...	...	...	...	...	17,010
Motherless Baby Days	...	...	...	...	...	898

## Admission by Districts

Athi River	33	Karima	1	Muguga	2
Dagoretti	41	Kiambu	80	Magadi	1
Dandora	43	Kibera	69	Ngong	29
Embu	1	Kwa Reuben	18	Nyeri	2
Embakasi	39	Kikuyu	14	Nakuru	1
Fort Hall	1	Kisumu	5	Naivasha	1
Garissa	1	Kijabe	3	Narok	1
Juja	2	Kibwezi	1	Ruaraka	39
Kabete	307	Konza	1	Ruiru	13
Kahawa	38	Langata	29	Ruaka	11
Kamiti	6	Limuru	7	Sultan Hamud	1
Kajiado	3	Manyani	1	Tororo	1
Kangundo	2	Machakos	14	Thika	16
Karen	49	Mbagathi	7	Uplands	2
Kasarani	34	Mombasa	2	Zanzibar	1

## Statistics, Clinic and Non-clinic

	Clinic	Direct	Total
Births ... ..	2,504	445	2,949
Stillbirths ... ..	137	26	163
Born Before Arrival ...	94	61	155
Malpresentations ... ..	72	17	89
Twins ... ..	38	14	52

94

## Stillbirths with Causes

	Clinic	Direct	Total
Anencephalic ... ..	3	2	5
Atelectasis ... ..	3	0	3
Ante-partum haemorrhage	11	2	13
Birth injuries ... ..	1	1	2
Breech deliveries ... ..	5	1	6
Cause unknown ... ..	12	2	14
Cord round neck ... ..	7	0	7
Congenital syphilis ... ..	3	0	3
Delayed labour ... ..	4	2	6
Death in utero ... ..	11	5	16
Hydrocephalic ... ..	4	1	5
Macerated foetus ... ..	10	2	12
Obstructed labour ... ..	17	3	20
Placenta praevia ... ..	4	1	5
Prematurity ... ..	18	2	20
Prolapsed cord ... ..	12	0	12
Ruptured uterus ... ..	3	1	4
Spina bifida ... ..	1	0	1
Toxaemia ... ..	5	0	5
White asphyxia ... ..	4	0	4
	138	25	163



## Infant Deaths with Causes

	Clinic	Direct	Total
Achondroplasic Dwarf ...	1	0	1
Atelectasis ... ..	9	2	11
Birth Injuries ... ..	2	0	2
Cerebral Injuries ... ..	12	2	14
Congenital heart ... ..	6	0	6
Delayed Labour ... ..	1	1	2
Haemorrhagic Disease of the newborn ... ..	1	0	1
Hydrocephalus ... ..	2	0	2
Marasmus ... ..	2	0	2
Microcephalus ... ..	1	0	1
Pneumonia ... ..	1	1	2
Prematurity ... ..	68	43	111
Rhesus Negative ... ..	1	0	1
Congenital Syphilis ... ..	1	0	1
Toxic absorption ... ..	1	2	3
White asphyxia ... ..	3	1	4
	112	52	164

## Maternal Deaths with Causes

	Clinic	Direct	Total
Eclampsia ... ..	2	0	2
Paralytic ileus after Caesarean section ... ..	1	0	1
Placenta praevia ... ..	1	0	1
Placenta accreta ... ..	1	0	1
Ruptured uterus ... ..	2	1	3
	7	1	8

## Operations

	Clinic	Direct	Total
Application of Willets Forceps	5	0	5
Artificial rupture of membranes	30	4	34
Caesarean Sections ...	68	8	76
Craniotomy ... ..	6	1	7
Curettage ... ..	5	1	6
Dilatation of Congenital Vaginal Septum ...	1	0	1
Forceps ... ..	52	4	56
Hysterectomy for Ruptured Uterus ... ..	0	2	2
Incision of Abcess ...	8	1	9
Internal Podalic Version ...	13	4	17
Laparotomy for ectopic gestation	1	0	1
Manual Removal of Placenta	6	2	8
Packing of uterus ... ..	1	0	1
Perineorrhaphy ... ..	3	0	3
Repair of ruptured uterus	3	0	3
Replacement transfusion for Rhesus Negative Baby	2	0	2
	204	27	231

Clinics

Ante-Natal:

Number held	...	...	...	...	203	
New cases, Resident	...	...	...	...	...	2,303
New cases, Non-Resident	...	...	...	...	...	1,782
Repeats, Resident	...	...	...	...	...	5,548
Repeats, Non-Resident	...	...	...	...	...	4,314
						<hr/> 13,947 <hr/>

Post-Natal:

Number held	...	...	...	...	48	
Resident	...	...	...	...	...	511
Non-Resident	...	...	...	...	...	268
						<hr/> 779 <hr/>

Total Abnormal Cases Treated	...	...	...	...	...	466
Total Normal Cases Treated	...	...	...	...	...	2,483
Died	...	...	...	...	...	8
Recovered	...	...	...	...	...	2,941

VENERAL DISEASES CLINIC

Efforts to obtain Shauri Moyo Clinic as a Venereal Diseases Centre having failed, the work was continued in the temporary clinic in the grounds of the African Maternity Hospital, Pumwani.

During the year it was decided that the diagnosis and treatment of male V.D. could not be undertaken by Council until such time as the Health Centre Service was established. While this decision was in some ways disappointing, there is no doubt that the present clinic would be inadequate and unsatisfactory for examination and treatment of male cases.

The figures which will be given for the year 1957 will not be, in general, directly comparable with those for previous years. For example, as a result of a change in treatment policy, the average number of attendances required for the treatment of a case of early syphilis has been reduced by half. Thus 399 **new** cases of syphilis were diagnosed in 1957, as compared with 479 in 1956, a reduction of only 80, but the total attendances for 1957 were 9,832 as compared with 21,349 in 1956.

Again, only those cases showing positive laboratory evidence of Gonorrhoea were so diagnosed in 1957. The abolition of the diagnosis of Clinical Gonorrhoea accounts in the main for a total of only 205 new cases of Gonorrhoea in 1957 as compared with 986 in 1956.

97

The majority of the 804 new patients who were not diagnosed as suffering from a venereal disease required treatment for non-gonococcal infection of the genito-urinary tract, frequently more prolonged and difficult than that required for specific infections.

The following tables will serve as an indication of the volume of work undertaken.

SYPHILIS

Total number of cases (all stages)					
diagnosed in 1957	...	...	...	...	399
No. of patients who completed one full course					
of treatment during 1957	...	...	...	...	360
No. of patients who completed more than one full					} 418
course of treatment during 1957	...	...	...	58	
Total attendances for observation and/or					
treatment	...	...	..	...	5.871

GONORRHOEA

No. of new cases diagnosed (1957)	..	...	205
No. of attendances for observation and/or			
treatment	...	...	1.240

**Non-Specific Infections**

No. of new cases seen 1957	...	...	...	...	804
No. of attendances for observation and/or treatment	...	...	...	...	2,716

**Home Visits (Defaulters)**

No. of home visits by clinic staff	...	...	...	849
No. of defaulting patients interviewed at home	...	...	...	455
No. of defaulting patients returned following home visits	...	...	...	310

**Kahn Tests**

No. of blood specimens taken	...	...	...	...	6,522
No. of Kahn tests POSITIVE or DOUBTFUL	...	...	...	...	1,240
No. of Kahn tests NEGATIVE	...	...	...	...	5,282

**Smears for Gonococci**

						Total	Positive
Urethral and Cervical	...	...	...	...	...	5,835	164
Vaginal	...	...	...	...	...	64	7
Eyes	...	...	...	...	...	73	29

**Injections Given**

N.A.B.	...	...	...	...	...	489	} 5,513
Bismuth	...	...	...	...	...	505	
Penicillin	...	...	...	...	...	4,367	
Streptomycin	...	...	...	...	...	152	

**Ayahs Examined**

Total	...	...	...	...	...	115
No. found to have V.D.	...	...	...	...	...	21



STAFF CLINIC  
AND INOCULATION CENTRE

Staff Clinic

The figures for 1957 are:—

Total attendances	13,001	Fit for duty	11,179
Total new cases	6,942	Unfit for duty	8,020
Average daily African staff	...	...	3,600
Daily attendance rate	...	...	1.95%
Daily off duty rate	...	...	0.72%

The principal complaints were:—

1956				1957			
	No. cases	%	new cases	No. cases	%	new cases	
Respiratory diseases	1,411	19%		1,916	27%		
Wounds	1,278	17%		1,511	21%		
Abdominal	807	11%		617	9%		
Influenza	1,111	15%		1,127	16%		

INOCULATION CENTRE

Inoculations and Vaccinations 1957

	Europeans		Asians	Africans	Total
Smallpox	...	4,818	9,415	1,343	15,576
Yellow Fever	...	3,379	9,834	231	13,444
T.A.B.	...	644	810	12,850	14,304
Cholera	...	225	2,299	1	2,525
Diphtheria/Pertussis	...	261	53	2	316
Diphtheria	...	61	13	—	74
Whooping Cough	...	17	58	13	88
					46,327
Polio (all races)					5,585
Totals	...	9,405	22,482	14,440	51,912

## FUNERALS SERVICE

During 1957 an important reorganisation of the Funerals Service of the Council took place. It had been apparent for some time that the service had not kept pace with the growth of the city. The old mortuary building had fallen into disrepair and had become inadequate, so much so that complaints had been received from relatives visiting their deceased for identification and other purposes. It was not situated in a very appropriate area, and the only solution was to plan and build an entirely modern and high grade establishment.

This was completed in July and proved to be a most admirable piece of work on the part of the Council's architects. A house for the Superintendent was included, and the equipment, which included refrigeration, left nothing to be desired. This latter provision was particularly important since it now means that persons do not have to be buried within twenty four hours, as hitherto, but can be kept almost indefinitely, even while relatives are brought from abroad.

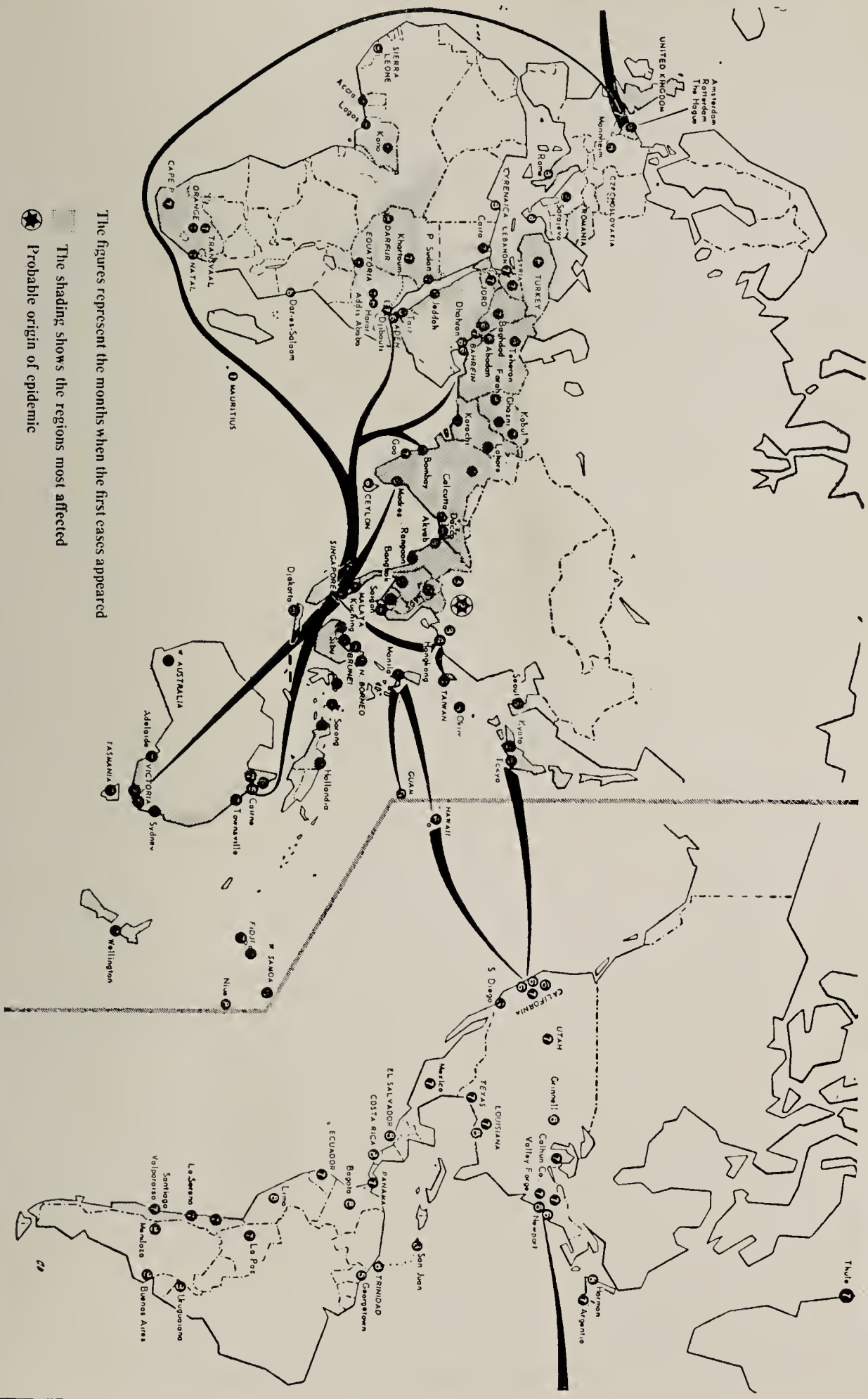
Another important move was the appointment of a Funerals Superintendent, who would deal with all aspects of the Funerals Service for all races. Prior to this, the work was divided between the Public Health, City Treasurer's and Parks Departments, and while it functioned fairly well, the mechanism was somewhat complicated, and caused unnecessary trouble to relatives. It will be readily appreciated that much distress is occasioned over even a slight hitch in the conduct of funerals and burials, and the new system of centralising the whole responsibility on one officer in the Public Health Department makes any mishap very unlikely.

The officer concerned was provided with a Funerals Assistant to cover absence for leave or sickness, and three Africans have been engaged and put under instruction to assist in post mortems and similar work.

As to the future, every effort is being made to introduce facilities for cremation. The matter has not yet come directly to the notice of Council, except for an occasional report to the Public Health Committee, but a private society has been formed and is very active.

It is hoped that when plans are complete, aid may be forthcoming from the Council to bring the scheme into operation, and finally for the Funerals Department to take it over entirely. It is envisaged that the crematorium itself and the garden of remembrance would be adjacent to the present mortuary.

# ASIAN 'FLU



*How Asian 'flu swept across the map from February to 31 August 1957*





**"ASIAN" INFLUENZA**

By Dr. P. Gaffikin, M.B., Ch.B., Medical Officer in Charge,

Asian Maternity and Child Welfare Section.

The year 1957 will be notable in medical history as the year of the "Asian" 'flu, for the impact of this virus infection on the population of the world was a most important influence on human health.

Nairobi, like most large centres of population, suffered an outbreak of typical form, beginning with scattered cases, followed by a tidal wave and subsiding in a few weeks.

This type of influenza was first observed in epidemic form in South Eastern Asia and the causal virus was labelled "Influenza A/Asia/1957". It travelled in an arc from Japan, through Korea, the Malay Peninsula and India. The World Health Organisation recorded the earliest cases in North West China. The virus arrived in Kenya towards the end of May, the immediate source being unknown. The infection was already active in South Africa and India, from which there is constant air traffic contact with Kenya.

A typical attack was characterised by severe occipital and retro-orbital headache, sore throat, sweating, prostration and a sense of constriction of the chest, and lumbar backache usually followed a little later. In children, abdominal pain was fairly frequent.

There was surprisingly little direct proved mortality from this type of 'flu, but many cases experienced prolonged morbidity and there was a marked tendency to relapse. It may be that deaths ascribed to other causes may have, in actual fact, been of influenzal origin. A very marked rise in deaths from pneumonia both in infants and children from between 1 — 5 years of age could be related to post-influenzal debility, and a considerable number of neo-natal deaths from prematurity may have been indirectly attributable to the virus in that premature birth may have been brought about by maternal influenza.

## SCHEDULE OF STAFF

Post	Name of Officer
Medical Officer of Health Deputy M.O.H.	A. T. G. Thomas, M.D., B.S., D.P.H. J. W. McAllan, M.B., Ch.B., D.P.H.
Chief Health Inspector	H. T. Beechey, Cert. R.S.I. & Meat. Dip.R.I.P.H.H.(Hons.)
Health Inspectors (Grade I)	Mr. D. Mackintosh, Cert., R.S.A.S. Mr. A. Ramshaw, Cert., R.S.I. and Meat Mr. K. E. Kendray, Cert., R.S.I. and Meat (to August) Mr. S. Daley, Cert., R.S.I. and Meat Mr. G. B. Ashford, Cert., R.S.A.S. and Meat Mr. J. Knowles, Cert., R.S.I. and Meat Mr. P.H. Newbold, Cert., R.S.I. and Meat Mr. G. V. Boid, Cert., R.S.A.S. and Meat Mr. D. Hastie, Cert., R.S.A.S. and Meat
Health Inspectors (Grade II)	Mr. R. D. Belsare, Cert., R.S.I. (India) and Meat Cert. (Eng.), Cert. Trop. Hy. Mr. Mohd. Din, Cert., R.S.I. (India).
Health Inspectors (Grade III) (African)	Mr. N. Mimano, Cert., R.S.I. (E.A.) Mr. T. L. Muganda, Cert., R.S.I. (E.A.) Mr. J. A. Ngaruiya, Cert., R.S.I. (E.A.) Mr. W. G. K. Nyawade, Cert., R.S.I. (E.A.) Mr. G. A. Otieno, Cert., R.S.I. (E.A.) (commenced Oct.)

**Clerical Staff :**

Administrative Assistant	Mr. R. C. Forster, M.B.E.
Secretary	Mrs. C. Burge.
Stenographers	Mrs. A. Alexander (part time) (left Feb.) Miss D. Butler (Mar. to Nov.) Miss M. Lathom (Aug. to Dec.) Mrs. I. L. Cairns (Dec.)
Clerk/Typists	Mrs. D. I. Butcher Mrs. S. Powell

**Inoculation Clinic :**

Assistant Medical Officer	Dr. F. S. Gillespie, M.B., B.Ch., B.A.O.
Sister Storekeeper	Mrs. J. Young, S.R.N., T.A.Cert.

**Infectious Diseases Control Section:**

Infectious Diseases Officer	Mr. J. Morrill.
Mosquito Inspectors	Mr. A. Gocs. Mr. M. I. Shah, Cert.R.S.I. (India). Mr. Y. Ahmedi.
Malaria Overseer	Mr. S. Keli. Mr. H. Odida (to Sept.)

Post	Name of Officer
Rodent Officer	Mr. L. H. Clough.
Rodent & Vermin Overseer	Mr. J. Karebe.
Statistician	Mrs. G. H. Millership.
Laboratory Technicians	Mr. W. Ongare.
	Mr. S. Otieno.

### European Child Welfare :

Assistant Medical Officer Grade I	Dr. P. Gaffikin, M.B., Ch.B.
Health Visitors	Mrs. E. M. Sullivan, S.R.N.
	Mrs. M. Dempster, S.R.N., S.C.M., H.V. Cert., R.F.N. (resigned Dec.)
	Mrs. F. Angel (from 1st Dec.) S.R.N., S.C.M., H.V.

### Parklands Day Nursery :

Matron	Mrs. I. B. J. Ross-Whyte, Princess Louise Children's Nurse.
Assistants	Mrs. K. Day (Mar. to Dec.)
	Mrs. C. Carcasson, S.R.N.
	Mrs. C. Randall.
	Mrs. L. Somen.
	Mrs. K. Bolden.
	Mrs. H. Priest.
	Mrs. M. Harcourt (Feb. to Aug.)
	Mrs. J. Reeves (Jan. to Aug.)
	Mrs. M. Leimuller (Sept. to Dec.)
Assistants (part time)	Mrs. O. Rosson.
	Mrs. S. Warren (Jan. to Sept.)
	Mrs. H. Davies, S.R.N., C.M. (Sept. to Dec.)
	Mrs. D. T. Kelly (Jan. to Aug.)
	Mrs. Thompson (Sept. to Dec.)

103

### Woodley Day Nursery :

Matron	Mrs. I. E. Daley, R.F.N.
Assistant Matron	Mrs. L. M. Simpson (Truby King Trained).
Assistants	Mrs. G. Whipp.
	Mrs. G. Burnett.
	Mrs. I. Simpson (Resigned Dec.)
	Mrs. P. Dowdell.
	Mrs. E. Newbold, S.R.N.
	Mrs. E. Coleman (Sept. to Dec.)
	Mrs. E. Burgin (commenced Dec.)

### High Ridge Day Nursery :

Matron	Mrs. H. R. Hobden, S.R.N., S.C.M. (Resigned Nov.)
	Mrs. L. D. Snowball (Commenced Nov.)
Assistants	Mrs. E.H. Johannes, Teacher's Diploma and Domestic Science Diploma (Lebanon).
	Mrs. O. Pereira.
	Mrs. L. Gunputrau.
	Mrs. S. L. Puri.

**African Maternity & Child Welfare :**

Medical Officers	Dr. J. A. T. Henry, M.B.E., M.B. Ch. B., D.T.M. and H. Dr. B.M.P. Van der Werf, M.D. (Utrech). Dr. E. Shirley (Jan. to Mar. and June to July). Dr. D. Clark M.B.Ch.B. (Jan. to May). Dr. V. R. Hume, M.B., B.S., M.R.C.S., L.R.C.P., D.T.M. and H. (Jan. to Feb. Sept. to Dec.). Dr. E. Haskard, M.R.C.S., L.R.C.P., D.P.H. Dr. B. B. Mapstone, M.B., Ch.B. (July to Dec.)
Supervisor of Health Visitors	Mrs. N. Mitchell, S.R.N., S.C.M. (Jan. to Feb.) Mrs. J. N. Jackson, S.R.N., S.R.S. (Children) C.M.B. (Feb. to Dec.)
Supervisor of District Midwives	Mrs. C. M. Davis, S.R.N., S.C.M., H.V.
Health Visitors	Mrs. B. J. Brooks, S.R.N., S.C.M. Miss P. J. Fisher, S.R.N., S.C.M., H.V. Cert. (Jan. to Sept.) Mrs. I. B. Pereira, S.R.N., S.C.M., H.V. Cert. (Jan. to July). Mrs. T. H. Wilson, S.R.N., S.C.M. Mrs. M. Perkins, S.R.N., S.C.M. (Jan. to June). Mrs. D. M. MacLean, S.R.N., S.C.M. (Special Premature Baby Nursing Cert.) Mrs. B. Davies, S.R.N., S.C.M. (1st part) H.V. Cert. Mrs. S. L. Street, S.R.N., S.C.M., H.V. Cert. (Jan. to Feb.) Mrs. B. M. Mulholland, S.R.N., S.C.M. (Feb. to Dec.) Mrs. A. Hoyle, S.R.N., S.C.M., D.N.O. (April to Dec.) Mrs. J. P. Kiely, S.R.N., S.C.M., (July to Sept.) Mrs. B. J. Taylor, S.R.N., S.C.M., (July to Dec.) Mrs. E. M. C. E. Wolff, S.R.N., S.C.M. (1st part) (Sept. to Dec.) Mrs. C. Chalupka, S.R.N., S.C.M., H.V. Cert. (Oct. to Dec.) Mrs. F. J. Wensley, S.R.N., S.C.M.

**Venereal Diseases Clinic :**

Medical Officer	Dr. T. Lyall, M.D.
European Sister	Mrs. M. Bracken, S.R.N.

**Lady Grigg African Maternity Hospital:**

Medical Superintendent	Dr. P. M. Anderson, L.R.C.P., M.R.C.S.
Matron	Miss J. Koppert, S.R.N., S.C.M.
European Sisters	Miss S. T. Wenzel, S.C.M. Sister Tutor. Mrs. M. Joyce, S.C.M. Miss F. E. O'Toole, S.R.N., S.C.M. Mrs. P. Welford, S.R.N., S.C.M. (Resigned April).



## Post

## Name of Officer

Mrs. J. Durie, S.R.N., S.C.M. (resigned June).  
 Miss E. Greening, S.R.N., S.C.M. (from April).  
 Miss J. Briggs (Aug. to Dec.)

**Asian Maternity & Child Welfare :**

Assistant Medical Officer	Dr. P. Gaffikin, M.B., Ch.B.
Grade I	
Assistant Medical Officer	Dr. E. Shirley, M.B., B.S. (part time).
Grade II	
Supervisor of Health Visitors	Mrs. N. Arthur, S.R.N., S.C.M., H.V. Cert. R.S.H.
European Supervisor Asian Midwives	Mrs. V. Hook, S.R.N., S.C.M.
Health Visitors	Mrs. E. Tyagi, S.R.N., S.C.M., D.H.V. (Kenya). Mrs. R. Pachecos, S.R.N., S.C.M., D.H.V. (Kenya). Mrs. N. Nayer, D.H.V. (Kenya). Mrs. J. Safri, D.H.V. (Kenya). Mrs. M. Sandu, D.H.V. (Kenya). Mrs. K. B. Saleem, D.H.V. (Kenya). Mrs. Gurcharan, D.H.V. (Kenya). Mrs. S. Daya, D.H.V. (Kenya). Miss Shirin Ahamed, D.H.V. (Kenya). Miss Gulshan Ahamed, D.H.V. (Kenya). Mrs. T. K. Trilochan, D.H.V. (Kenya). Miss D. K. Sehmi.
Clerk — Interpreter	

**Funerals and Mortuary :**

Superintendent	Mr. F. Clayton, M.B.E.S.
Mortuary Assistant and African Burials	Mr. U. Singh Gill.
African Burials	Mr. Jawala Singh.

# GENERAL FUND REVENUE ACCOUNT FOR THE

## PUBLIC HEALTH

### EXPENDITURE

#### Public Health Administration :

	£	s.	cts.	£	s.	cts.
<b>Employees —</b>						
Salaries ... ..	30,075	8	82			
Special Temporary Allowances ... ..	28	11	90			
Housing Allowances ... ..	634	3	86			
Superannuation Charges ... ..	4,500	1	69			
Provident Fund Contributions ... ..	176	18	58			
Passages Reserve Contribution ... ..	410	0	00			
Medical Benefits ... ..	216	5	20			
Wages etc. — African staff ... ..	416	2	95			
Passages — New Appointments ... ..	648	3	43			
				37,105	16	43
<b>Running Expenses —</b>						
<b>Transport</b>						
Locomotion ... ..	1,476	11	33			
Other Transport ... ..		6	00			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ...	256	9	77			
Printing Report ... ..	226	5	00			
Postages ... ..	177	0	18			
Telephone ... ..	527	18	24			
Insurances ... ..	671	16	00			
Uniforms ... ..	45	12	83			
Rent of Offices ... ..	2,666	17	02			
Electricity ... ..	54	0	85			
Central Establishment Charges ...	10,080	0	00			
<b>Miscellaneous</b>						
Food and Drug Analysis ... ..	262	3	62			
Food and Meat Inspection ... ..	14	7	00			
Health Education ... ..	126	3	61			
Purchase of Projector ... ..	55	0	00			
Purchase of Laboratory Equipment ...	96	14	07			
Dictaphone ... ..	47	5	00			
Other Expenses ... ..	3	13	87			
				16,788	4	39
				53,894	0	82
<i>Less: Charged to Staff Clinic, Inoculation</i>						
Centre and Poultry Abattoir ... ..		400	0 00			
<i>Carried forward</i> ... ..				53,494	0	82

YEAR ENDED 31st DECEMBER, 1957

SERVICES

INCOME

Public Health Administration :

	£	s.	cts.	£	s.	cts.
Government Grant — General	112,758	2	76			
Government Grant — Social Services	6,721	4	87			
Fees — Food and Drug Analysis	28	4	50			
Other Income	1,252	8	31			
				120,760	0	44

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
Brought forward ... ..				53,494	0	82
<b>Infectious Diseases Prevention:</b>						
<b>Employees —</b>						
Salaries ... ..	8,283	13	65			
Housing Allowances ... ..	355	15	33			
Superannuation Charges ... ..	1,024	1	88			
Provident Fund Contributions ... ..	21	18	27			
Medical Benefits ... ..	110	18	15			
Wages etc. — African Staff ... ..	14,115	8	18			
				23,911	15	46
<b>Running Expenses —</b>						
<b>Premises</b>						
Maintenance of Buildings ... ..	7	13	25			
Ramp at Store ... ..	118	13	68			
<b>Supplies, Equipment, etc.</b>						
Stores and Materials ... ..	3,356	16	62			
Laboratory Equipment ... ..	16	14	30			
Uniforms ... ..	540	12	37			
Extending Ladder, Rodent Control ... ..	17	10	00			
<b>Transport</b>						
Locomotion ... ..	955	18	15			
T.I.F.A. Unit — Running Expenses ... ..	431	7	80			
T.I.F.A. Unit — Renewals Reserve						
Contribution ... ..	240	0	00			
Other Transport ... ..	2,945	6	14			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ... ..	584	10	91			
Telephone ... ..	78	2	93			
Rent of Offices ... ..	608	16	95			
Insurances ... ..	2	1	50			
<b>Miscellaneous</b>						
Fly Nuisance Abatement ... ..	29	14	00			
Hospital Fees ... ..	2,542	3	00			
Notification Fees ... ..	12	6	00			
Other Expenses ... ..	9	16	00			
				12,498	3	60
Carried forward ... ..				89,903	19	88



## INCOME

					£	s.	cts.	£	s.	cts.
Brought forward	...	...	...					120,760	0	44
<b>Infectious Diseases Prevention:</b>										
Vermin and Rodent Destruction	...	...	...		2,901	13	46			
Malaria Control ... ..	...	...	...		200	0	00			
					<hr/>			3,101	13	46

<i>Carried forward</i>	...	...	...	123,861	13	90
------------------------	-----	-----	-----	---------	----	----

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
Brought forward ... ..				89,903	19	88
<b>Staff Clinic and Inoculation Centre :</b>						
<b>Employees —</b>						
Salaries ... ..	2,431	1	77			
Housing ... ..	102	6	67			
Superannuation Charges ... ..	87	16	40			
Provident Fund Contributions ... ..	9	6	24			
Medical Benefits ... ..	4	6	67			
Wages etc. — African Staff ... ..	762	2	73			
				3,397	0	48
<b>Running Expenses —</b>						
Furniture and Fittings ... ..		1	98			
Electricity ... ..	18	4	22			
<b>Supplies, Equipment, etc.</b>						
Medical Stores and Equipment ... ..	6,462	9	76			
Cleaning Materials ... ..	4	2	70			
Uniforms ... ..	35	11	09			
Laundry ... ..	34	19	21			
Removal of Partitions ... ..	41	10	46			
<b>Transport</b>						
Locomotion ... ..		8	19 48			
Other Transport ... ..	15	1	00			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ...	129	1	11			
Telephone ... ..	57	16	43			
Rent of Offices ... ..	787	5	66			
Departmental Establishment Charges ...	350	0	00			
Other Expenses ... ..	12	0	00			
				7,957	3	10
<b>Carried forward ... ..</b>						
				101,258	3	46

**I N C O M E**

	£	s.	cts.	£	s.	cts.
<i>Brought forward</i> ... ..				123,861	13	90

**Staff Clinic and Inoculation Centre :**

Government Contribution for Inoculation ...	900	0	00			
Vaccination and Inoculation Fees ... ..	197	1	30			
Poliomyelitis Fees ... ..	5,607	9	50			
	<hr/>			6,704	10	80

<i>Carried forward</i> ... ..				130,566	4	70
-------------------------------	--	--	--	---------	---	----

# EXPENDITURE

	£	s. cts.	£	s. cts.
Brought forward ... ..			101,258	3 46
<b>Veneral Diseases Treatment :</b>				
<b>Employees —</b>				
Salaries ... ..	3,361	5 54		
Housing Allowances ... ..	8	5 00		
Superannuation Charges ... ..	406	10 38		
Provident Fund Contributions ... ..	10	7 05		
Medical Benefits ... ..	16	13 28		
New Appointments ... ..	394	18 00		
Wages etc. — African Staff ... ..	763	12 64		
			4,961	11 89
<b>Running Expenses —</b>				
<b>Premises</b>				
Maintenance of Buildings ... ..	18	7 58		
Cleaning Materials ... ..	29	2 91		
<b>Supplies, Equipment, etc.</b>				
Medical Stores and Equipment ... ..	733	4 07		
Uniforms ... ..	26	16 21		
<b>Transport</b>				
Locomotion ... ..	44	5 32		
Other Transport ... ..	4	5 90		
<b>Establishment Expenses</b>				
Printing, Stationery and Advertising ... ..	37	5 40		
Telephone ... ..	4	0 00		
Rent ... ..	360	0 00		
Insurances ... ..		18 00		
			1,258	5 39
<b>Tuberculosis Survey :</b>				
<b>Employees —</b>				
Salaries ... ..			615	15 39
<b>Carried forward ... ..</b>				
			108,093	16 13



# INCOME

							£	s.	cts.	£	s.	cts.
Brought forward	...	...	...							130,566	4	70
<b>Veneral Diseases Treatment :</b>												
Fees	...	...	...	...	...	...	5	10	00			
Rent	...	...	...	..	...	...	72	0	00			
								<hr/>		77 10 00		

<i>Carried forward</i>	...	...	...	130,643	14	70
------------------------	-----	-----	-----	---------	----	----

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
<i>Brought forward</i> ... ..				108,093	16	13
<b>Day Nurseries :</b>						
<b>European — Parklands</b>						
<b>Employees —</b>						
Salaries ... ..	4,986	1	34			
Superannuation Charges ... ..	153	19	06			
Passages Reserve Contribution ... ..	56	0	00			
Medical Benefits ... ..	14	18	72			
New Appointments ... ..	5	11	25			
Wages etc. — African Staff ... ..	448	4	65			
					5,664	15 02
<b>Running Expenses —</b>						
<b>Premises</b>						
Maintenance of Buildings ... ..	130	17	59			
Maintenance of Furniture and Fittings	104	4	84			
Maintenance of Grounds ... ..	137	4	90			
Electricity and Fuel ... ..	263	0	86			
Water and Conservancy ... ..	107	2	90			
Cleaning Materials ... ..	112	4	65			
Rates ... ..	152	5	00			
Renewals Reserve Contribution ... ..	125	0	00			
<b>Supplies, Equipment, etc.</b>						
Maintenance of Equipment etc. ... ..	114	15	80			
Provisions ... ..	1,191	2	92			
Uniforms ... ..	63	0	89			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ...	12	9	35			
Telephone ... ..	47	10	98			
Insurances ... ..	5	1	00			
<b>Miscellaneous</b>						
Loans Fund Expenses ... ..	8	1	00			
Other Expenses ... ..	46	1	32			
					2,620	4 00
<b>Loan Charges —</b>						
Principal ... ..	286	15	90			
Interest ... ..	450	19	22			
					737	15 12
<i>Carried forward</i> ... ..					117,116	10 27

**I N C O M E**

				£	s. cts.	£	s. cts.
Brought forward	...	...	...			130,643	14 70

**Day Nurseries :**

**European — Parklands**

Fees	...	...	..	...	...	...	8,706	15	13
Rent of Flat	...	...	...	...	...	...	90	0	33
							<hr/>		
							8,796	15	46

Carried forward	...	...	...	<hr/>					
							139,440	10	16

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
<i>Brought forward</i> ... ..				117,116	10	27
<b>Day Nurseries—(Continued)</b>						
<b>European — Woodley</b>						
<b>Employees —</b>						
Salaries ... ..	4,040	18	51			
Superannuation Charges ..	161	8	14			
Housing Allowances ... ..	93	0	11			
Medical Benefits ... ..	35	14	46			
Wages etc. — African Staff ... ..	384	14	75			
					4,715	15 97
<b>Running Expenses —</b>						
<b>Premises</b>						
Maintenance of Buildings ... ..	95	11	73			
Alterations to Buildings ... ..	52	8	27			
Maintenance of Grounds ... ..	133	17	29			
Tarmac Apron, Playground ... ..	56	14	92			
Maintenance of Furniture and Fittings	107	18	08			
New Furniture and Fittings ... ..	63	2	49			
Electricity and Fuel ... ..	196	8	28			
Water and Conservancy ... ..	88	6	84			
Cleaning Materials ... ..	95	15	40			
Rates ... ..	61	5	00			
Renewals Reserve Contribution ... ..	150	0	00			
<b>Supplies, Equipment, etc.</b>						
Maintenance of Equipment ... ..	137	4	61			
New Equipment ... ..	100	8	61			
Provisions ... ..	1,502	5	18			
Uniforms ... ..	56	19	12			
<b>Transport</b>						
Other Transport ... ..	20	16	05			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ...	21	1	23			
Telephone ... ..	54	11	05			
Insurances ... ..	4	10	00			
<b>Miscellaneous</b>						
Loans Fund Expenses ... ..	17	1	32			
Other Expenses ... ..	16	13	83			
					3,032	19 30
<b>Loan Charges —</b>						
Principal ... ..	621	12	56			
Interest ... ..	675	4	12			
					1,296	16 68
<i>Carried forward</i> ... ..						
					126,162	2 22



INCOME

							£	s. cts.	£	s. cts.
Brought forward	...	...	...						139,440	10 16
Day Nurseries—(Continued)										
European — Woodley										
Fees	...	...	...	...	...	...	6,893	8 60		
Rent of Flat	...	...	..	...	...	...	120	0 00		
							<hr/>		7,013	8 60

Carried forward	...	...	...				<hr/>		146,453	18 76
-----------------	-----	-----	-----	--	--	--	-------	--	---------	-------

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
<i>Brought forward</i> ... ..				126,162	2	22
<b>Day Nurseries—(Continued)</b>						
<b>Asian — High Ridge</b>						
<b>Employees —</b>						
Salaries ... ..	2,686	10	76			
Superannuation Charges ... ..	179	18	05			
Medical Benefits ... ..	17	0	90			
New Appointments ... ..	6	14	75			
Wages etc. — African Staff ... ..	240	0	30			
					3,130	4 76
<b>Running Expenses —</b>						
<b>Premises</b>						
Maintenance of Buildings ... ..	142	17	42			
Maintenance of Grounds ... ..	76	9	06			
Tarmac ... ..	304	0	68			
Maintenance of Furniture and Fittings	93	1	04			
New Furniture and Fittings ... ..	53	14	20			
Electricity and Fuel ... ..	182	4	08			
Water and Conservancy ... ..	88	0	55			
Cleaning Materials ... ..	61	3	54			
Rates ... ..	81	7	50			
Renewals Reserve Contribution ...	85	0	00			
<b>Supplies, Equipment etc.</b>						
Maintenance of Equipment ... ..	44	9	85			
New Equipment ... ..	36	10	82			
Provisions ... ..	934	18	62			
Uniforms ... ..	26	2	51			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ...	2	2	88			
Telephone ... ..	19	13	95			
Insurances ... ..	1	10	00			
Other Expenses ... ..	11	16	79			
					2,245	3 49
<b>Carried forward</b> ... ..						
					131,537	10 47

# INCOME

				£	s. cts.	£	s. cts.
<i>Brought forward</i>	...	...	...			146,453	18 76
<b>Day Nurseries—(Continued)</b>							
<b>Asian — High Ridge</b>							
Fees	...	...	...			4,409	7 50

<i>Carried forward</i>	...	...	...			150,863	6 26
------------------------	-----	-----	-----	--	--	---------	------

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
<i>Brought forward</i> ... ..				131,537	10	47
<b>Maternity and Child Welfare :</b>						
<b>European :</b>						
<b>Employees —</b>						
Salaries ... ..	2,656	4	01			
Superannuation Charges ... ..	189	1	77			
Provident Fund Contributions ... ..	82	3	54			
Medical Benefits ... ..	16	17	72			
New Appointments ... ..	11	5	31			
				2,955	12	35
<b>Running Expenses —</b>						
<b>Premises</b>						
Maintenance of Buildings ... ..	48	7	10			
Maintenance of Furniture and Fittings	8	3	49			
New Furniture and Fittings ... ..	49	19	84			
Electricity and Fuel ... ..	3	10	00			
Water and Conservancy ... ..	4	3	45			
Renewals Reserve Contribution ...	25	0	00			
<b>Supplies, Equipment etc.</b>						
Medical Stores and Equipment ... ..	81	10	33			
Purchase of Infant Foods ... ..	895	13	55			
Uniforms ... ..	3	12	36			
<b>Transport</b>						
Locomotion ... ..	221	2	66			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ...	45	13	66			
Telephone ... ..	12	10	71			
Insurances ... ..	12	50				
				1,399	19	65
Loan Charges ... ..				229	18	78
<i>Carried forward</i> ... ..				136,123	1	25



# INCOME

				£	s. cts.	£	s. cts.
<i>Brought forward</i>	...	...	...			150,863	6 26
<b>Maternity and Child Welfare :</b>							
<b>European :</b>							
Sale of Foods	...	...	...	...	...	898	11 20

121

<i>Carried forward</i>	...	...	...			<hr/> 151,761	17 46
------------------------	-----	-----	-----	--	--	---------------	-------

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
<i>Brought forward</i> ... ..				136,123	1	25
<b>Maternity and Child Welfare (Contd.)</b>						
<b>Asian :</b>						
<b>Employees —</b>						
Salaries ... ..	11,205	15	78			
Superannuation Charges ... ..	1,102	10	95			
Provident Fund Contributions ... ..	149	9	50			
Passage Reserve Contribution ... ..	60	0	00			
Medical Benefits ... ..	125	15	65			
Wages etc. — African Staff ... ..	291	16	97			
				12,935	8	85
<b>Running Expenses —</b>						
<b>Premises</b>						
Maintenance of Buildings ... ..	204	9	79			
Maintenance of Grounds ... ..	115	14	70			
Maintenance of Furniture and Fittings ... ..	209	9	21			
New Furniture and Fittings ... ..	29	14	00			
Fencing and Gates ... ..	18	1	39			
Electricity and Fuel ... ..	244	14	12			
Water and Conservancy ... ..	54	9	00			
Cleaning Materials ... ..	45	17	52			
Rates ... ..	441	0	00			
Renewal Reserve Contribution ... ..	150	0	00			
<b>Supplies, Equipment etc.</b>						
Medical Stores and Equipment ... ..	305	3	12			
Maintenance of Equipment ... ..	3	10	90			
New Equipment ... ..	320	17	63			
Uniforms ... ..	131	1	12			
<b>Transport</b>						
Locomotion ... ..	292	10	42			
Other Transport ... ..	1,137	16	42			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ... ..	188	10	60			
Telephone ... ..	54	0	60			
Insurance ... ..	3	2	00			
<b>Miscellaneous</b>						
Health Visitors' Training Scheme ... ..	25	4	00			
Midwives' and Dais Training Scheme ... ..	9	4	10			
Night Security ... ..	133	9	10			
Loans Fund Expenses ... ..	3	18	08			
				4,121	17	82
<b>Loan Charges —</b>						
Principal ... ..	112	16	09			
Interest ... ..	103	18	57			
				216	14	66
<i>Carried forward</i> ... ..				153,397	2	58

# INCOME

					£	s.	cts.	£	s.	cts.
Brought forward	...	...	...					151,761	17	46
<b>Maternity and Child Welfare (Contd.)</b>										
<b>Asian :</b>										
Training Fees	...	...	...	...	20	0	00			

Carried forward	...	...	..					151,781	17	46
-----------------	-----	-----	----	--	--	--	--	---------	----	----

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
<i>Brought forward</i> ... ..				153,397	2	58
<b>Maternity and Child Welfare (Contd.)</b>						
<b>African :</b>						
<b>Employees —</b>						
Salaries ... ..	15,946	16	86			
Housing Allowances ... ..	251	17	61			
Superannuation Charges ... ..	417	11	93			
Provident Fund Contributions ... ..	247	17	50			
Passages Reserve Contribution ... ..	135	0	00			
Medical Benefits ... ..	39	9	30			
New Appointments ... ..	39	15	85			
Wages etc. — African Staff ... ..	4,037	2	94			
						21,115 11 99
<b>Running Expenses —</b>						
<b>Premises</b>						
Maintenance of Buildings ... ..	213	9	17			
Alterations to Buildings ... ..	381	6	63			
Maintenance of Grounds ... ..	106	6	64			
Maintenance of Furniture, etc. ... ..	157	16	53			
New Furniture and Fittings ... ..	539	14	22			
Electricity and Fuel ... ..	177	16	83			
Water and Conservancy ... ..	117	16	75			
Cleaning Materials ... ..	67	9	95			
Rents ... ..	384	6	75			
Rates ... ..	155	15	00			
<b>Supplies, Equipment etc.</b>						
Medical Stores and Equipment — Clinics	1,295	6	40			
Medical Stores and Equipment — Midwives	109	13	68			
Typewriter ... ..	28	2	50			
Maintenance of Equipment ... ..	179	8	59			
New Equipment ... ..	425	12	16			
Teaching Unit ... ..	13	11	65			
Purchase of Infant Foods ... ..	487	19	70			
Uniforms ... ..	279	7	15			
<b>Transport</b>						
Locomotion ... ..	645	17	90			
Other Transport ... ..	1,850	5	48			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ...	205	2	33			
Telephone ... ..	164	10	76			
Insurances ... ..	5	6	00			
<b>Miscellaneous</b>						
Christmas Parties ... ..	105	11	37			
Loans Fund Expenses ... ..	2	4	38			
Other Expenses ... ..	2	0	00			
						8,101 18 52
<b>Loan Charges —</b>						
Principal ... ..	102	17	28			
Interest ... ..	262	14	52			
						365 11 80
<i>Carried forward</i> ... ..				182,980	4	89



**I N C O M E**

							£	s. cts.	£	s. cts.
	<i>Brought forward</i>	...	...	...					151,781	17 46
<b>Maternity and Child Welfare (Contd.)</b>										
<b>African :</b>										
	Fees	...	...	...	...	...	670	5 50		
	Sale of Foods	...	...	...	...	...	360	1 10		
	Other Income	...	...	...	...	...	65	13 30		
							<hr/>		1,095	19 90

	<i>Carried forward</i>	...	...	..			<hr/>		152,877	17 36
--	------------------------	-----	-----	----	--	--	-------	--	---------	-------

## EXPENDITURE

[illegible]

**I N C O M E**

				£	s. cts.	£	s. cts.
Brought forward	...	...	...			152,877	17 36

Carried forward	...	...	...			<hr/> 152,877	17 36
-----------------	-----	-----	-----	--	--	---------------	-------

## EXPENDITURE

	£	s. cts.	£	s. cts.
<i>Brought forward</i> ... ..			183,627	16 22
<b>Lady Grigg Maternity and Training Hospital :</b>				
<b>Employees —</b>				
Salaries ... ..	8,612	6 40		
Special Temporary Allowances ... ..	2	3 00		
Housing Allowances ... ..	18	6 00		
Superannuation Charges ... ..	461	1 65		
Provident Fund Contributions ... ..	1	0 74		
Passages Reserve Contribution ... ..	60	0 00		
Medical Benefits ... ..	30	5 45		
Wages etc. — African Trainees ... ..	763	11 64		
Wages etc. — African Domestic Staff ... ..	1,500	17 60		
New Appointments ... ..	75	11 18		
			11,525	3 66
<b>Running Expenses —</b>				
<b>Premises</b>				
Maintenance of Buildings ... ..	531	10 01		
Alterations to Buildings ... ..	1,273	15 09		
Maintenance of Grounds ... ..	521	10 23		
Tarmac Drive ... ..	413	17 02		
Maintenance of Furniture and Fittings ... ..	541	7 85		
New Furniture and Fittings ... ..	21	0 60		
Electricity and Fuel ... ..	1,559	0 54		
Water and Conservancy ... ..	755	16 15		
Cleaning Materials etc. ... ..	482	3 34		
Rates ... ..	136	10 00		
Renewals Reserve Contribution ... ..	500	0 00		
<b>Supplies, Equipment etc.</b>				
Maintenance of Equipment ... ..	119	18 83		
New Equipment ... ..	735	8 63		
Linen and Cutlery ... ..	819	0 82		
Medical Stores ... ..	2,163	0 94		
Provisions ... ..	2,175	16 23		
Uniforms ... ..	154	9 33		
<b>Transport</b>				
Other Transport ... ..	987	0 87		
<b>Establishment Expenses</b>				
Printing, Stationery and Advertising ... ..	93	19 81		
Telephone ... ..	133	19 30		
Insurances ... ..	16	19 93		
<b>Miscellaneous</b>				
Consultants' and Anaesthetists' Fees ... ..	591	1 00		
Recreation & English Tuition ... ..	18	10 75		
Library Books ... ..	16	9 10		
Loans Fund Expenses ... ..	25	19 09		
Other Expenses ... ..	6	16 70		
			14,795	2 16
<b>Loan Charges —</b>				
Principal ... ..	1,217	17 17		
Interest ... ..	1,149	15 95		
			2,367	13 12
<b>Provision for Capital Outlay —</b>				
Staff House (Balance) ... ..	70	17 82		
<i>Carried forward</i> ... ..			212,386	12 98



# INCOME

	£	s. cts.	£	s. cts.
Brought forward			152,877	17 36

## Lady Grigg Maternity and Training Hospital :

Fees	...	...	...	...	4,185	18	50	
Rent — V.D. Clinic	...	...	...	...	360	0	00	
Dressings	...	...	...	...	649	1	00	
Other Income	...	...	...	...	3	0	00	
								5,197 19 50

Carried forward	..	..	..		158,075	16	86
-----------------	----	----	----	--	---------	----	----

# EXPENDITURE

				£	s. cts.	£	s. cts.
	<i>Brought forward</i>	...	...			212,386	12 98
<b>Ambulance Service :</b>							
<b>General</b>							
	<b>Employees —</b>						
	Wages etc. — Drivers	...	...			526	0 40
	<b>Running Expenses —</b>						
	Equipment	...	...	20	14 24		
	Uniforms	...	...				
	Transport	...	...	75	4 20		
	Renewals Reserve Contribution	...	...	200	0 00		
						295	18 44
	Establishment Expenses	...	...			100	0 00
<b>African Estates :</b>							
	<b>Employees —</b>						
	Wages etc. — Drivers	...	...			616	9 70
	<b>Running Expenses —</b>						
	Equipment	...	...	9	4 47		
	Transport	...	...	353	0 82		
	Renewals Reserve Contribution	...	...	200	0 00		
						562	5 29
<b>Anti-Malarial Works :</b>							
<b>Construction of Drains (see opposite)</b>							
	<b>Employees —</b>						
	Wages etc. — Artizans	...	...	21	11 50		
	Wages etc. — Africans	...	...	17	9 60		
	Stores and Materials	...	...	50	11 03		
	Transport and Plant	...	...	1,301	3 84		
	Payments to Contractors	...	...	6,052	6 56		
						7,443	2 53
<b>Maintenance of Drains :</b>							
	<b>Employees —</b>						
	Wages etc. — Artizans	...	...	1,280	10 20		
	Wages etc. — African Staff	...	...	1,202	2 00		
	Stores and Materials	...	...	774	13 81		
	Transport and Plant	...	...	616	13 88		
						3,873	19 89
<b>Cleaning of Drains :</b>							
	<b>Employees —</b>						
	Wages etc. — Artizans	...	...	4	10 60		
	Wages etc. — African Staff	...	...	2,933	14 90		
	Stores and Materials	...	...	166	7 49		
	Transport and Plant	...	...	994	0 20		
	Charges — Other Departments	...	...	122	7 00		
						4,221	0 19
<b>Carried forward</b>							
		...	...			230,025	9 42

INCOME

					£	s. cts.	£	s. cts.
Brought forward	...	..	...				158,075	16 86
<b>Ambulance Service :</b>								
Hire Charges	...	...	..	...	...		507	4 00

Construction of Drains (see opposite) :

				£	s. cts.
Nairobi River, Eastleigh (near					
Sewage Disposal Works) ...	...			1,252	8 31
L.R. 37 off Buckleys Road ...	...			6,190	14 22
				<hr/>	
				7,443	2 53
				<hr/>	

Carried forward	...	...	...			<hr/>	158,583	0 86
-----------------	-----	-----	-----	--	--	-------	---------	------

## EXPENDITURE

	£	s.	cts.	£	s.	cts.
Brought forward .. ...				230,025	9	42
<b>Mortuary, Funerals and Cemeteries :</b>						
<b>Supervision and Mortuary :</b>						
<b>Employees —</b>						
Salaries ... ..	1,776	10	31			
Superannuation Charge ... ..	59	16	12			
Provident Fund Contributions ... ..	69	1	34			
Passage Reserve Contribution ... ..	80	0	00			
Medical Benefits ... ..	43	5	38			
Wages etc. — African Staff ... ..	69	8	45			
New Appointments ... ..	222	3	00			
				2,320	4	60
<b>Running Expenses —</b>						
<b>Premises</b>						
Maintenance of Buildings ... ..	3	8	00			
Maintenance of Old Mortuary ... ..	38	12	52			
Electricity and Fuel ... ..	63	16	30			
Water and Conservancy ... ..	38	12	20			
Cleaning Materials ... ..	6	3	32			
Rates ... ..	162	15	00			
Renewals Reserve Contribution ... ..	200	0	00			
<b>Supplies, Equipment etc.</b>						
Maintenance of Equipment ... ..	11	3	29			
General Stores ... ..	1	4	08			
Uniforms ... ..	6	15	94			
<b>Transport</b>						
Locomotion ... ..	125	6	30			
<b>Establishment Expenses</b>						
Printing, Stationery and Advertising ... ..	4	12	47			
Telephone ... ..	73	17	01			
Insurances ... ..	3	17	50			
Central Establishment Expenses ... ..	460	0	00			
Other Expenses ... ..	1	13	50			
				1,201	17	43
				233,547	11	45
(Less Charged to Funerals and Burials)				2,016	8	09
				231,531	3	36
Provision for Capital Expenditure ...				7,238	0	00
				238,769	3	36
<b>Funerals — European and Asian :</b>						
<b>Employees —</b>						
Allowances to Staff ... ..				652	15	00
<b>Running Expenses —</b>						
Cost of Coffins ... ..	5,147	4	66			
Lettering Plates ... ..	101	10	00			
<b>Transport</b>						
Hearse — Running Expenses ... ..	171	0	83			
Hearse — Renewals Reserve Contribution ... ..	200	0	00			
Central Establishment Expenses ... ..	773	0	00			
Supervision and Mortuary ... ..	1,039	10	62			
				7,432	6	11
Carried forward ... ..				246,854	4	47



# INCOME

					£	s.	cts.	£	s.	cts.
								158,583	0	86
<b>Mortuary, Funerals and Cemeteries :</b>										
<b>Supervision and Mortuary :</b>										
								348	0	00
<b>Funerals — European and Asian :</b>										
		</								

## EXPENDITURE

Brought forward	...	...	...	£	s. cts.	£	s. cts.
						246,854	4 47
<b>Mortuary, Funerals and Cemeteries (Continued) :</b>							
<b>African Burials :</b>							
<b>Running Expenses —</b>							
Supplies, Equipment etc.	...	...	...				
Stores	...	...	...	38	5 95		
<b>Transport</b>							
Hearse — Running Expenses	...	...	...	212	6 08		
Hearse — Renewals Reserve Contribution				160	0 00		
<b>Establishment Expenses —</b>							
Printing, Stationery and Advertising	...	...	...	1	5 00		
Central Establishment Charge	...	...	...	70	0 00		
Supervision and Mortuary	...	...	...	976	17 47		
						1,458	14 50
<b>Cemeteries — General</b>							
<b>Employees —</b>							
Wages etc. — African Staff	..	...	...			1,205	12 95
<b>Running Expenses —</b>							
Grounds	...	...	...				
Water and Conservancy	...	...	...	46	10 19		
<b>Supplies, Equipment etc.</b>							
Stores	...	...	...	21	1 11		
Uniforms	...	...	...	63	10 05		
<b>Transport</b>							
Other Transport	...	...	...	71	12 10		
<b>Establishment and other Expenses</b>							
Insurances	...	...	...	30	12 00		
Central Establishment Charges	...	...	...	267	0 00		
Parks Department Establishment Charges				200	0 00		
Loans Fund Expenses	...	...	...	8	91		
						700	14 36
<b>Loan Charges —</b>							
Principal	...	...	...	7	13 10		
Interest	...	...	...	11	13 89		
						19	6 99
<b>Special Work (see note opposite) —</b>							
Wages etc.	...	...	...	620	1 30		
Materials and Plants	...	...	...	140	3 62		
Transport	...	...	...	59	7 70		
Stores	...	...	...	93	14 39		
Contractors and other Departments	...	...	...	59	7 32		
						972	14 33
<b>Provision for Capital Expenditure —</b>							
New Cemetery, Langata	...	...	...			4,000	0 00
Carried forward						255,211	7 60

# INCOME

	£	s. cts.	£	s. cts.
Brought forward ... ..			168,603	16 06

## Mortuary, Funerals and Cemeteries (Continued) :

### African Burials :

Burial Fees ... ..	515	6 68
--------------------	-----	------

### Details of Special Work (see opposite) :

	£	s. cts.
Park Cemetery — Layout, Paths and Borders ... ..	110	0 00
— Seats ... ..	60	0 22
South Cemetery — Grassing and Drainage ... ..	42	6 20
Forest Road Cemetery — Paths ...	99	17 15
— Re-grassing ... ..	101	8 80
— New Surface Drainage ...	470	9 21
— Repairs to Wall, Gates etc.	29	5 43
Park and Forest Road Cemeteries — Grave numbering ... ..	59	7 32
	<hr/>	<hr/>
	972	14 33

135

Carried forward ... ..	169,119	2 74
------------------------	---------	------

## EXPENDITURE

					£	s. cts.	£	s. cts.
	Brought forward	...	...	...			255,211	7 60
<b>Mortuary, Funerals and Cemeteries (Continued) :</b>								
<b>Cemeteries — African :</b>								
<b>Employees —</b>								
	Wages etc. — African Staff	...	...	...			1,025	12 82
<b>Running Expenses —</b>								
<b>Grounds</b>								
	Maintenance of Buildings	...	...	...	45	0 45		
	Maintenance of Grounds	...	...	...	49	16 24		
	Numbering of Graves	...	...	...	23	18 30		
	Water and Conservancy	...	...	...	19	15 80		
<b>Supplies, Equipment etc.</b>								
	Loose Tools, etc.	...	...	...	48	5 41		
	Uniforms	...	...	...	19	4 30		
<b>Establishment Expenses</b>								
	Insurances	...	...	...	25	0 00		
	Central Establishment Charges	...	...	...	60	0 00		
	Loans Fund Expenses	...	...	...		17 07		
	Other Expenses	...	...	...	2	14 02		
							294	11 59
<b>Loan Charges —</b>								
	Principal	...	...	...	14	12 91		
	Interest	...	...	...	22	8 02		
							37	0 93
<b>Provision for Capital Expenditure —</b>								
	Development of Cemeteries	...	...	...			100	0 00

136

TOTAL ... ..

256,668 12 94



**I N C O M E**

					£	s. cts.	£	s. cts.
<i>Brought forward</i>	...	...	...				169,119	2 74
<b>Mortuary, Funerals and Cemeteries (Continued) :</b>								

TOTAL	...	...	...	...			<u>169,119</u>	<u>2 74</u>
-------	-----	-----	-----	-----	--	--	----------------	-------------

**Wellcome Library  
for the History  
and Understanding  
of Medicine**

PRINTED BY  
ACME PRESS LIMITED  
VICTORIA STREET  
NAIROBI, KENYA













